

In the Matter of)
)
Effects of Communications Towers on) WT Docket No. 03-187
Migratory Birds)

To: The Commission

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REPLY COMMENTS OF THE INFRASTRUCTURE COALITION

INTRODUCTION AND SUMMARY

¹ *Effects of Communications Towers on Migratory Birds*, WT Docket 03-187, *Notice of Proposed Rulemaking*, 21 F.C.C.R. 13241 (2006) (“*NPRM*”); *see also Order*, DA 07-72 (rel. Jan. 12, 2007) (extending comment and reply deadlines to April 23, 2007 and May 23, 2007, respectively). Unless otherwise stated, all references herein to “Comments of” a particular party refer to comments submitted in response to the *NPRM*, which were due April 23, 2007.

support for continued meaningful review and research concerning any relationship between towers and migratory bird mortality. Nevertheless, the record does not support the adoption of additional regulation or policies at this time. Moreover, regulation based on inconclusive scientific evidence could actually undermine, rather than advance, important public interest goals.

A diverse group of commenters, including infrastructure companies, wireless and broadcast carriers,² critical infrastructure providers, public safety representatives, state and local officials and concerned citizens, oppose the adoption of unwarranted avian-tower regulation or policies that could harm the nation's continuing infrastructure deployment and adversely affect air safety — at a time when cutting-edge communication service is critical for personal, commercial, homeland security and public safety needs.³ Many of these commenters agree that

² In nearly identical comments, several broadcasters posit that they are not opposed to avian-tower regulation as long as their towers are not subject to the new regulations. *See* Comments of Winstanley Broadcasting, Inc. (“Winstanley”); Morris Broadcasting Company of New Jersey, Inc (“Morris”); Positive Alternative Radio, Inc., *et al.* (“Positive”); Eastern Shore Radio (“Eastern”). Evidence, however, does not support regulation given (i) they have not observed any avian mortalities at their towers and (ii) the scant and conflicting data developed to date concerning avian tower-related mortality. *See* Comments of Winstanley (no fatalities in 31 years); Morris (no fatalities in the 15 years since it obtained its license); Positive (no fatalities over an undisclosed period); Eastern Shore (no fatalities in 23 years).

³ *See generally, e.g.,* Comments of the Infrastructure Coalition; Applied Technology Group, Inc. (“ATG”); AT&T Mobility LLC f/k/a Cingular Wireless LLC (“AT&T”); DTC Wireless (“DTC”); Governor M. Michael Rounds, State of South Dakota (“Governor Rounds”); Land Mobile Communications Counsel (“LMCC”); Louisiana Mosquito Control Association (“LMCA”); Named State Broadcasters Associations (“State Associations”); National Public Safety Telecommunications Council; National Telecommunications Cooperative Association (“NTCA”); Prince George’s County, MD, Anne Arundel County, MD, Regional Planning Committee 42, Commonwealth of Virginia, Maryland Institute for Emergency Medical Services Systems and Maryland State Highway Administration; South Dakota Bureau of Information & Telecommunications; South Dakota Public Utilities Commission (“SDPUC”); Sprint Nextel (“Sprint”); St. Tammany Parish Mosquito Abatement District 2 (“St. Tammany”); Georgie K. Stanford (“Stanford”); Union Telephone Company (“Union”); United States Cellular

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the state of the science does not support,⁴ and the law does not authorize,⁵ infrastructure regulation addressing migratory birds, particularly where the scientific basis for regulating is so uncertain and there is no assurance that regulation would positively impact migratory bird mortality.

The Infrastructure Coalition's avian expert, Woodlot Alternatives, Inc. ("Woodlot"), previously concluded that the current state of the record does not support regulation.⁶ Nothing filed in the opening comments changes that result. The record in support of regulation contains few substantive comments offering meaningful analysis of the science or the law. Comments by the American Bird Conservancy *et al.* ("ABC"),⁷ the U.S. Department of Interior's Fish and

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Corporation ("USCC"); Utilities Telecom Council ("UTC"); James P. Wagner; Verizon Wireless ("Verizon").

⁴ See, e.g., Comments of the Infrastructure Coalition; ATG; AT&T; Citicasters Licenses, L.P. ("Citicasters"); DTC; LMCC; NTCA; State Associations; Sprint; Union; USCC; UTG; Verizon; James P. Wagner.

⁵ See, e.g., Comments of the Infrastructure Coalition; AT&T; Sprint; Union; USCC; Verizon; State Associations.

⁶ Woodlot is regarded as "one of the top avian risk assessment firms in the United States." See Woodlot, Technical Comment at 4 (June 2005) ("Woodlot (6/05) Technical Report"). Woodlot reviewed the state of the then current scientific studies in 2003 and again in 2005 and found that more scientifically validated research was needed before any recommendations could be incorporated into federal policy. See *id.* at 15 ("Scientifically valid research work should be conducted and must be properly reported before specific design recommendations are incorporated into or amend Federal policy on the build-out and deployment of our nation's communications infrastructure, particularly broadcast and wireless towers."); see also generally Woodlot, Technical Comments (Nov. 2003) ("Woodlot (11/03) Technical Report").

⁷ The Infrastructure Coalition takes exception to the substance, tone and format of ABC's comments. ABC's 111-page submission offers little new original scientific or legal analysis and repeatedly attacks the FCC for allegedly being dilatory and biased. Yet, the FCC has been proactive in a proceeding where much is in controversy and the state of the science continues to be inadequate to support regulation. In fact, the Commission undertook the unusual step of sponsoring a review of the science concerning migratory birds and towers by Avatar Environmental, LLC ("Avatar") — an impartial third party consultant. The allegations of bias

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Wildlife Service (“FWS”), Land Protection Partners (“LPP”) and other advocates of regulation⁸ largely repeat and repackage anecdotal evidence that has previously been shown to be insufficient to warrant regulation.⁹

As discussed below and in the attached new Technical Report by Woodlot,¹⁰ the new scientific data or analyses that have been submitted: (i) do not withstand scientific rigor (*e.g.*, new LPP estimates and extrapolation regarding avian-tower mortality and biological significance); (ii) are not comprehensive enough to merit broad-based regulatory intervention (*e.g.*, the Michigan study¹¹); or (iii) actually undermine or directly controvert the proposed regulation (*e.g.*, the Citicasters Colorado study¹² or the Evans/Manville 2007 study¹³). Rather, the new evidence proffered clearly demonstrates that additional study is required prior to any FCC action. Given the largely anecdotal, non-peer-reviewed, geographically-skewed and often

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are completely unfounded, as the *NPRM* is replete with proposals that would adversely affect the telecommunications industry.

⁸ See generally, *e.g.*, Comments of Defenders of Wildlife (“DoW”).

⁹ See generally Woodlot (11/03) Technical Report; Woodlot (6/05) Technical Report.

¹⁰ See Woodlot, Technical Comments (May 2007), appended as an attachment hereto (“Woodlot (5/07) Technical Report”).

¹¹ References herein to the Michigan study refer to the multi-year study led by Joelle L. Gehring, Ph.D., examining migratory bird collisions at several towers in Michigan. On April 12, 2007, two reports prepared in connection with the study and authored by Dr. Gehring and Paul Kerlinger were submitted in the docket of this proceeding. See Joelle Gehring and Paul Kerlinger, *Avian Collisions and Communications Towers: I. The Role of Tower Height and Guy Wires* (2007, Final) (“Gehring (4/07) Height/Guy Wire Report”); Joelle Gehring and Paul Kerlinger, *Avian Collisions and Communications Towers: II. The Role of Federal Aviation Administration Obstruction Lighting Systems* (2007, Final) (“Gehring (4/07) Lighting Report”).

¹² See Lori A. Neilsen and Kenneth R. Wilson, *Clear Channel of Northern Colorado Slab Canyon KQLF-FM Broadcasting Tower Avian Monitoring Project 2002-2004* (Final, Dec. 16, 2006) (“Colorado study”), appended as Exhibit I to Comments of Citicasters.

¹³ See William R. Evans, Yukio Akashi, Naomi S. Altman, and Albert M. Manville, *Response of Night-migrating Birds in Cloud to Colored and Flashing Light* (Jan. 2007) (“Evans/Manville”), appended to Comments of Old Bird, Inc.

conflicting state of the science, the promulgation of any new regulations or avian-tower policies would be arbitrary and capricious. This is particularly the case given the fact that avian-tower mortality rates are *declining* while the number of towers is increasing — a trend that also requires more research.¹⁴ Under these circumstances, it would be entirely serendipitous if any of the proposed solutions were beneficial to migratory birds, given the unsettled state of the science.

Nowhere is this more evident than the case of the FCC’s tentative conclusion to prefer white strobe lighting systems over all others. That tentative conclusion is predicated on a 2004 memorandum by the FAA tentatively supporting the use of white strobe lights where not otherwise hazardous to air safety, which was based on preliminary guidance issued by FWS in 2000.¹⁵ A 2007 peer-reviewed study co-authored by Dr. Albert Manville of FWS, however, now finds that “a flashing red light would be less of a stimulus to migrant birds than flashing white light.”¹⁶ The unsettled state of the science is also evident in proponents’ fall-back lighting position calling for the elimination of solid red lights. Dr. Manville’s report concludes “[w]e find no evidence that bird aggregation occurs because a light is red.”¹⁷ While Dr. Gehring’s 2007 Michigan lighting study (which has not yet been peer reviewed) reached a contrary finding

¹⁴ See Comments of the Infrastructure Coalition at 6-7.

¹⁵ See Comments of the Infrastructure Coalition at 43-45. That guidance, however, was based only upon “the best information available” at the time — information which Avatar has evaluated and found inconclusive. See Avatar, Notice of Inquiry Comment Review Avian/Communication Tower Collisions, Final, Prepared for Federal Communications Commission, at 3-46 (filed Dec. 10, 2004) (“Avatar Report”). Indeed, until recently, FWS was not even willing to recommend FCC rule changes based on its guidance, stating that “until more definitive lighting determinations are reached based on credible, statistically-significant, peer-reviewed science, the [FWS] will not . . . make recommendations to the FCC and the Federal Aviation Administration (FAA) to modify their standards” See Comments of FWS (11/03) at 8.

¹⁶ Evans/Manville at 21.

¹⁷ *Id.* (emphasis added).

concerning solid red lights, on the issue of non-solid lights it found “no significant difference in fatality rates among towers lit only with red strobes vs. white strobes vs. red incandescent flashing beacons.”¹⁸ Notwithstanding any disagreement between Drs. Manville and Gehring over any threat red lighting may pose, they both agree that further study is necessary.¹⁹ At a minimum, this calls into question the efficacy of a preference for white strobes and compels the FCC to await the outcome of additional peer-reviewed studies before taking any action. Otherwise, the FCC will be imposing costly change that may be, at best, ineffective or, at worst, unintentionally harmful, thereby compelling the FCC to potentially revisit this matter to cure a newly-created harm wrought by regulating without a sufficient and clear scientific foundation.

The proposed preference for white strobe lights also presents local zoning and air safety concerns. It is well-documented that white strobe lighting is contrary to local preferences for aesthetic reasons.²⁰ Moreover, the FAA recently changed its lighting guidelines for turbines to prefer red strobes to white because “[r]esearch showed that the *white strobes were very distracting to pilots*, due to the quick flash exposure and bright appearance.”²¹ This finding undermines any reliance on the FAA’s 2004 memo, which agreed to a white strobe preference only so long as a “hazardous condition for pilots” was not created. Further, the FAA’s concern that white strobes present a pilot safety issue was echoed by several commenters.²²

¹⁸ Gehring (4/07) Lighting Report at 7.

¹⁹ Evans/Manville at 22; Gehring (4/07) Lighting Report at 13; Comments of Joelle Gehring at 4-6.

²⁰ See discussion *infra* Section II.A.2.

²¹ James W. Paterson, Jr., *Development of Obstruction Lighting Standards for Wind Turbine Farms*, DOT/FAA/AR-TN05/50, at A-2 (Nov. 2005) (“Turbine Conspicuity Study”) (emphasis added), available at < <http://www.tc.faa.gov/its/worldpac/techrpt/artn05-50.pdf>>.

²² See, e.g., Comments of LMCA at 1; St. Tammany at 1; Stanford at 1.

While proponents of regulation also call for elimination of solid red lights (L-810s), FAA guidelines do not currently allow that.²³ A joint request to the FAA by the infrastructure industry and avian environmental groups to conduct a conspicuity study to examine whether red sidelights can be eliminated is pending, and the Coalition understands that the FAA intends to undertake such a study as part of an overall review of its lighting guidelines. The FCC should support such an examination by the FAA to determine whether such lighting changes can be made without compromising our nation's air safety.

Other proposed mitigation techniques, including imposing restrictions on tower height and/or guyed wire towers, creating collocation obligations, or expanding the scope of proposed towers that would require an environmental assessment ("EA"), are not justified by the record and could only be implemented at great cost to the nation's communications infrastructure, public safety, and homeland security needs.

Finally, the proponents of avian-tower regulation offer little in the way of new legal arguments under the National Environmental Protection Act ("NEPA"), the Migratory Bird Treaty Act ("MBTA"), or the Endangered Species Act ("ESA") that have not already been analyzed and properly rejected by commenters in prior phases of this proceeding. As demonstrated below, their legal arguments remain unpersuasive.

For all these reasons, the Commission should decline to adopt avian-tower regulations or policies. Instead, the Commission should foster ongoing negotiations between infrastructure groups and avian environmental groups; support the joint efforts of those groups in their request to the FAA to conduct a conspicuity study to examine whether red sidelights can be safely

²³ See Comments of FWS at 17; Comments of Joelle Gehring at 2.

eliminated; and encourage continuing broad-based, peer-reviewed research into avian-tower issues.

I. THERE REMAINS INSUFFICIENT COMPREHENSIVE, PEER-REVIEWED RESEARCH TO JUSTIFY NEW REGULATIONS OR POLICIES.

Just as it did in 2003, Woodlot has again surveyed the recent studies and scientific arguments to determine whether the current state of scientific knowledge on avian-tower mortality has matured to the point that there is a comprehensive body of peer-reviewed data that warrants action. Its report, which is attached, specifically addresses: (1) the two reports resulting from the multi-year Michigan tower studies directed by Joelle L. Gehring, Ph.D.²⁴ and her comments based on those reports;²⁵ (2) the report by Travis Longcore, Ph.D. of LPP and his colleagues on behalf of ABC;²⁶ (3) the comments submitted by FWS; and (4) the Evans/Manville report submitted by Old Bird, Inc. As discussed in the Woodlot Technical Report and the following sections, the research that has been submitted as a basis for regulation of towers in the interest of minimizing avian mortality is limited in scope, preliminary, and inconclusive. In fact, the conflicting results of the research (as well as the data provided by Citicasters)²⁷ call into question the need for or, efficacy of, any regulations at this time. Further, the current state of

²⁴ Gehring (4/07) Height/Guy Wire Report and Gehring (4/07) Lighting Report, cited *supra* note 11.

²⁵ Comments of Joelle Gehring.

²⁶ Travis Longcore, Catherine Rich, and Sidney A. Gauthreaux, Jr., *Biological Significance of Avian Mortality at Communications Towers and Policy Options for Mitigation: Response to Federal Communications Commission Notice of Proposed Rulemaking Regarding Migratory Bird Collisions with Communications Towers*, WT Docket No. 03-187 (Land Protection Partners, April 23, 2007), filed as Comments of LPP (“LPP Report”).

²⁷ See Colorado study, cited *supra* note 12.

research confirms Woodlot’s prior finding that the record is insufficient to support a finding of biological significance due to any incidence of avian-tower collisions.

A. The Michigan Study

While Dr. Gehring’s Michigan study “specifically addressed important information needs,” it is far from being the “definitive proof” that “tall towers, towers with guy wires, and towers with certain lighting parameters have disproportionately higher fatality rates for migratory birds on a national level.”²⁸ The study suffers from the fact that it was limited in many ways which were beyond the control of Dr. Gehring — “funding, access to sites, inability to quantify bird passage rates in relation to impacts, and sample size” — and serves better as a starting point for further research than as a basis for drawing solid conclusions.²⁹

The Michigan study, Woodlot notes, must be viewed as “preliminary” and any conclusions drawn from it “tentative” because it has not yet been submitted to scientific journals for peer review and publication.³⁰ While Dr. Gehring states that the final reports have been reviewed by some statisticians and scientists,³¹ Woodlot notes that “[t]he results of these reviews, whether positive or negative, however, are not presented.”³²

As a threshold matter, Dr. Gehring has declined requests to provide access to the raw data underlying the studies, thus preventing any independent corroboration of her analysis.³³ This is important because overall mortality rates at the towers studied were low, and some towers had no

²⁸ Woodlot (5/07) Technical Report at 3.

²⁹ *Id.*

³⁰ *Id.*

³¹ Comments of Joelle Gehring at 1.

³² Woodlot (5/07) Technical Report at 3.

³³ *See id.* at 3-4.

mortality.³⁴ Without seeing the raw data, it is not possible to see whether a particular tower was responsible for most of the observed mortality, and thus skewed the results, or whether observed mortality was equally distributed. If only certain towers in each group were being influenced by a factor not studied, *e.g.*, the frequency with which birds pass over a particular tower or its landscape position, then that factor should be reflected in the analysis.³⁵

The Michigan study was limited in sample size and diversity. A total of 24 towers were examined in just one state, but not all of those towers were studied during every migration season. For example, in 2003, six medium (380-480 feet) towers were studied; in 2004, 21 medium and three very tall (over 1000 feet) towers were studied; and in 2005 three medium and three very tall towers were studied. No short (under 380 feet) or medium-tall (480-1000 feet) towers were studied during any of the migration seasons³⁶ — yet 80% of all towers in the United States are 400 feet or less in height.³⁷

Woodlot observes that the limited sample size, which varied significantly from year-to-year, makes it difficult to draw definitive inferences regarding the effects on avian mortality of guyed towers, tall towers, and towers with particular lighting arrangements. For example, the 2003 study examined only three guyed and three unguyed towers in the medium height class, but the sample size for each category is too small for the reported mean and standard error mortality

³⁴ See *id.* at 3.

³⁵ See *id.*

³⁶ Gehring (04/07) Height/Guy Wire Report at 3.

³⁷ See discussion *infra* Section II.B (summarizing tower data by height as of May 2007 provided by *TowerSource*). Specifically, out of 188,744 towers in the United States, 151,003, or 80%, are 400 feet or less in height. 132,250, or 70%, are 200 feet or less in height. See *id.*

rates to be meaningful.³⁸ According to Woodlot, “[i]t is misleading to conclude that there is a statistically significant difference between guyed and un-guyed towers based on these data.”³⁹

The mean results from the 2004 study, which included a larger sample of towers in this class, are more statistically significant, but the 2005 study again produced unreliable results due to its small sample size.⁴⁰

To reach conclusions concerning avian mortality involving guyed versus unguyed towers, Dr. Gehring relies on data she characterizes as statistically significant during some seasons as well as data that she concedes are *not* statistically significant during other seasons, including the most recent data from fall 2005.⁴¹ After reviewing the study and the resultant data, Woodlot, is concerned that due to limited sample sizes, the absence of raw data and the presentation of only totals, the study results may be skewed.⁴² Woodlot concludes that meaningful analysis of the data is impossible without the release of the raw data.⁴³

The study suffers from other shortcomings as well. For example, the number of birds flying over the towers was not quantified, despite the fact that Dr. Gehring had originally planned to do so because the analysis of the significance of the mortality data is strongly influenced by the number of birds flying by.⁴⁴ Woodlot points out that the failure “to control for

³⁸ See Woodlot (5/07) Technical Report at 7.

³⁹ *Id.* (emphasis added).

⁴⁰ See *id.*

⁴¹ Gehring (04/07) Height/Guy Wire Report at 6.

⁴² See Woodlot (5/07) Technical Report at 7.

⁴³ See *id.*

⁴⁴ See *id.* at 4.

migration intensity confounds interpretation of the results.”⁴⁵ Moreover, the study included several towers in locations known to have particularly high concentrations of migrating birds, which “further confounded” the results.⁴⁶ Woodlot notes that several aspects of the study were knowingly designed to maximize the observed mortality rates, including the selection of “riskier” locations near the shoreline and the selection of observation periods conducive to “large-scale or catastrophic mortality events.”⁴⁷

Nevertheless, the Michigan study did not reveal any widespread or massive avian mortality in the vicinity of towers.⁴⁸ On average, *one bird was retrieved about every two days at a given tower*⁴⁹ during “the peak period of spring and fall migration” over several successive years.⁵⁰ While there had been prior reports of alleged isolated “large-scale events” involving hundreds or thousands of birds,⁵¹ Dr. Gehring noted the “absence of large-scale fatality events” during the Michigan study and said most incidents involved a single fatality on a given day, not “the spectacular events that trigger newspaper headlines.”⁵²

⁴⁵ *Id.* at 5. Woodlot adds: “In this regard, it may not be prudent to conclude that observing more dead birds on the ground at any particular site is directly due to the characteristics of the tower. It may be primarily related, instead, to the number of birds passing by, which is unknown in this study.” *Id.*

⁴⁶ *Id.* at 6.

⁴⁷ *Id.* at 5-6 (quoting Dr. Gehring’s 2003 study plan).

⁴⁸ Gehring (04/07) Height/Guy Wire Report at 10.

⁴⁹ Based on the uncorrected data in the Michigan study’s Tables 1-5, the average number of birds retrieved per day at each tower over the course of all of the periods studied was 0.52 — about one every two days. *See* Gehring (04/07) Height/Guy Wire Report at 7-8.

⁵⁰ Gehring (04/07) Height/Guy Wire Report at 3.

⁵¹ Gehring (04/07) Height/Guy Wire Report at 2.

⁵² Gehring (04/07) Height/Guy Wire Report at 10. The report indicates that the largest fatality events during the study involved 11 and 16 birds in a given night. *Id.* FWS has suggested that isolated avian-tower collisions in the aggregate can be significant even in the

(footnote continued)

One of the objectives of the Michigan study was to determine “whether there were differences in fatality rates among towers equipped with white strobes, red strobe-like lights, and red incandescent flashing beacons.”⁵³ Importantly, Dr. Gehring found “there was no significant difference in the fatality rates among towers lit only with red strobes vs. white strobes vs. red incandescent flashing beacons,”⁵⁴ which, if correct, would raze the rationale for FCC’s proposed preference for white strobes. While the Michigan study does suggest that there is greater mortality at towers with solid red lights than at towers with only flashing lights,⁵⁵ this finding is at odds with Evans/Manville’s findings, discussed below, that solid red light are no more of an attractant than darkness.⁵⁶

Dr. Gehring candidly disclaims that her study provides definitive answers. Rather, she acknowledges the limited scope of the Michigan study and calls for further research:

Additional research on the numbers of avian fatalities at towers of different heights, in different regions, and in association with different topographical features would further clarify the numbers of migratory birds colliding with towers each year. This research could be conducted . . . in concert with population studies of a sample of bird species most likely to be affected by collisions with towers (i.e., species that commonly collide with towers and endangered species likely to collide).⁵⁷

(footnote continued)

absence of large mortality events, but offers no analysis, only conjecture. *See* Comments of FWS at 13-14. While LPP does take aggregation into account as part of its analysis (via extrapolation), *see* LPP Report at 4, 7, 10, 15, that analysis does not withstand scientific scrutiny and cannot be relied upon, as discussed below in Section I.B. *See also* Woodlot (5/07) Technical Report at 8-11.

⁵³ Gehring (4/07) Lighting Report at 4.

⁵⁴ Gehring (4/07) Lighting Report at 7.

⁵⁵ Gehring (4/07) Lighting Report at 7, 11-12.

⁵⁶ *See* discussion *infra* Section I.C.

⁵⁷ Comments of Joelle Gehring at 2-3.

She also pointed to a need to continue research into the relationship between tower location and avian collisions,⁵⁸ as well as the need for further research on lighting and tower options that were not examined in the Michigan study.⁵⁹ Finally, Dr. Gerhing observed that there had been “no research” on the effect of guy markers on collisions.⁶⁰

B. LPP Report

The LPP Report provides a detailed and revealing description of how many prior estimates of nationwide avian mortality, such as those issued or cited by FWS, have been computed.⁶¹ FWS has often cited estimates of 4-5 million, but perhaps as high as 40-50 million, birds colliding with towers each year.⁶² Indeed, Commissioner Copps has cited the high end of this estimate as a “sobering conclusion coming from the federal agency with the greatest scientific expertise . . . and primary responsibility for protecting migratory birds.”⁶³ LPP’s Comments reveal with clarity, for the first time, that these estimates and their predecessors trace back to an estimate that was extrapolated from data collected decades ago from *only three*

⁵⁸ Comments of Joelle Gehring at 7.

⁵⁹ See, e.g., Comments of Joelle Gehring at 5 (stating that replacing steady red lights with simultaneously blinking red lights “would require additional research to determine its effectiveness at reducing avian fatalities”); Gehring (4/07) Lighting Report at 13 (“Studies of how the lights on taller towers impact fatality rates should be the focus of future conservation research.”); Comments of Joelle Gehring at 6 (“Additional research would determine if there is a critical tower height below which birds do not collide with great frequency.”).

⁶⁰ Comments of Joelle Gehring at 6.

⁶¹ LPP Report at 2.

⁶² Comments of FWS at 9-10.

⁶³ *NPRM*, Separate Statement of Commissioner Michael J. Copps.

towers.⁶⁴ Specifically, in 1979, an FWS official averaged the average annual mortality rates at these three towers and multiplied it by the total number of towers in the United States to arrive at the first estimate of bird mortality from tower collisions, after adjusting it for certain assumptions.⁶⁵ That original estimate of 1.25 million collisions was later updated several times by multiplying the same old three-tower average mortality by the current number of towers.⁶⁶ According to LPP, FWS arrived at its 2001 estimate of 4-5 million collisions in this manner.⁶⁷ Recently, FWS has indicated that the number of avian mortalities due to towers “could” be an order of magnitude higher — as much as 40 to 50 million annually — but this does not appear to be based on any actual evidence.⁶⁸

Woodlot finds that an estimate based on such a small and nonrepresentative sample size is inherently flawed as a basis for extrapolating to every tower across the United States.⁶⁹ Also significant is the fact that these estimates all derive from decades-old information which, in addition to the faulty extrapolation, may no longer even be correct. Indeed, it is uncontroverted that studies indicate a significant decrease in the number of tower fatalities over the last 20 years

⁶⁴ According to LLP, two were tall towers in Florida studied between the mid-1950s and the early 1970s. One tower in South Dakota was also studied, but nothing further is known about it or the study of its bird mortality. *See* LPP Report at 2.

⁶⁵ *See id.*

⁶⁶ *See id.*

⁶⁷ *See id.*

⁶⁸ The only source cited for the 40-50 million figure is Dr. Albert Manville of FWS, who has not described this range as a formal “estimate” with any scientific basis, but has said only that mortality “could” range that high; he couples this range with a statement that only a “cumulative impacts study” (which has apparently not been performed) would provide an estimate of the true magnitude of the number. *See, e.g.*, FWS Comments at 9-10; *see also* Manville, A.M., II, *Bird strikes and electrocutions at power lines, communication towers, and wind turbines: state of the art and state of the science — next steps toward mitigation*, 9 (2005), available at <http://www.fws.gov/Midwest/eco_serv/wind/references/ManvilleBirdMortality.pdf>.

⁶⁹ *See* Woodlot (5/07) Technical Report at 8.

while numerous new towers have been built.⁷⁰ Thus, LPP's description of the methodology and data used to reach both the 4-5 million estimate and the 40-50 million estimate debunks the validity of those numbers.

Retreating from its support of the earlier methodology and data, LPP now claims to have conducted its own independent analysis to arrive at a new total mortality estimate of 4.3 million birds killed annually in collisions with towers.⁷¹ As an initial matter, this "new" analysis undermines any continuing claim by FWS or others that mortality rates may be as high as 50 million annually, as ABC seems to acknowledge.⁷² Even assuming *arguendo* the validity of LPP's newest estimate, it supports only the low end of the mortality estimates (4-5 million) advanced by FWS and others over the years and in this proceeding. This estimate is essential in putting possible avian mortality in context of the overall risks to birds posed by other variables.⁷³

LPP's new computations used to arrive at its newest annual avian-tower mortality estimate of 4.3 million, however, do not withstand scrutiny. As Woodlot explains,⁷⁴ LPP applied a regression analysis of an undisclosed nature to statistics on avian mortality at towers that it selected for high levels of avian mortality (as discussed below), as gleaned from various third-party sources of unverified reliability. The results of this questionable regression analysis are projected avian mortalities for towers of various height classes, which LPP subjected to

⁷⁰ See Comments of Infrastructure Coalition at 6-7 (citing support).

⁷¹ See LPP Report at 5.

⁷² See Comments of ABC at 21 ("In the Longcore et al. Land Protection Partners Analysis (2007), the authors have concluded that ~4.3 million birds are killed at communication towers under the jurisdiction of the FCC annually, *and have adjusted avian mortality from their previous Report to concur with the low end estimates made therein.*") (emphasis added).

⁷³ See discussion *infra* Section III.D.2.(2).

⁷⁴ See Woodlot (5/07) Technical Report at 8-11.

adjustments based on another round of questionable assumptions.⁷⁵ The adjusted projections were finally applied to towers in the FCC's antenna registration database for each height class to arrive at an overall estimate of avian mortality. LPP used still other avian mortality data of highly dubious reliability, this time categorized by species and region, to arrive at regional mortality rates by species.⁷⁶ It then applied the purported regional species mortality rates to subdivide its earlier estimates of total avian mortality by species identically for each tower in a given region. LPP's piling of assumption on top of assumption, and bad data on top of bad data, reveals that its avian mortality estimates amount to a house of cards bounded by uncertainty.⁷⁷

LPP also used a biased methodology for selecting the sites it used in arriving at its estimates. It states, “[w]e included only those Bird Conservation Regions where substantial avian mortality has been reported at towers, or can be presumed to occur based on geographic proximity to recorded mortality sites.”⁷⁸ By selecting areas with known substantial avian mortality, versus towers where there is little or no known avian mortality, the methodology is biased to produce high mortality data. As Woodlot points out, this is important because later on

⁷⁵ See *id.* at 9-11. For example, LPP assumed that searchers locate only half of all birds. See LPP Report at 3-4. Dr. Gehring, by contrast, tested and controlled for detection rates instead of making such an assumption. Likewise, LPP assumed that half of all birds would be removed by scavengers. See Woodlot (5/07) Technical Report at 9. Again, Dr. Gehring tested and controlled for detection rates instead of making an assumption.

⁷⁶ For example, when LPP did not have sufficient data for one region, it used data concerning species mortality caused by streetlights, ignoring the fact that streetlights differ from towers in virtually every way, including height, lighting, and construction. See LPP Report at 10.

⁷⁷ See Woodlot (5/07) Technical Report at 8-11; see generally LPP Report at 2-13, 15-16.

⁷⁸ LPP Report at 3 (emphasis added).

in its comments, LPP draws inferences and conclusions regarding biological significance which are based on a methodology that pre-ordains high mortality figures.⁷⁹

LPP essentially admits that its analysis is no more than pseudo-science. It acknowledges that “[t]he results of this mortality assessment illustrate the potential complications of extrapolated mortality for historical towerkill records,” noting that as a result of using old data, the mortality estimates “may reflect historical rather than current patterns.”⁸⁰ The use of old data is particularly problematic because, as previously noted, avian mortality has been decreasing over the last several decades as new towers are being built, and thus the old data may not reflect this trend.

LPP’s analysis further lacks transparency and has not been peer-reviewed. Many aspects of its analysis are supported only by citations to papers that are “in preparation” (*i.e.*, have not yet been written) or “in review” (*i.e.*, have not yet been finalized). Because the supporting papers do not yet exist or are unavailable and have not been peer-reviewed, LPP’s conclusions are, at a minimum, too preliminary for conclusions to be drawn.⁸¹ Indeed, little or no information is supplied in the report about the methodologies used, and data essential for

⁷⁹ See Woodlot (5/07) Technical Report at 11. LPP claims to have addressed this bias by assuming that only half of all towers experience avian mortality, and therefore halving its projections, but the validity of this assumption and the method of correction is questionable, especially given that LPP appears to have used only data from regions with “significant” mortality.

⁸⁰ LPP Report at 14-15. As an example of the unreliability of its own estimates, it noted that it had extrapolated its estimate of 3000 Yellow Rail birds annually from historical data gathered when that species was much more plentiful than today, and thus “it is likely that towers no longer kill as many” of that species as its estimate would suggest. LPP Report at 14.

⁸¹ See Woodlot (5/07) Technical Report at 8.

evaluating the results is not provided.⁸² For all these reasons, LPP's new annual avian mortality estimate of 4.3 million total, as well as its species-by-species estimates, which it uses in projecting the biological significance of avian-tower mortality, do not withstand scientific scrutiny.⁸³

Finally, the LPP Report also fails to come to grips with the most significant finding in the Manville/Evans report — namely, that solid red lights are no more likely to attract birds than darkness, flashing red, or white strobe lights. LPP cites Evans/Manville only for support of the conclusion that flashing lights do not attract birds, and does not address how the new research undermines its brief argument for requiring flashing lights rather than solid.⁸⁴

Rather than shoring up the previous avian-tower mortality estimates widely relied upon by avian groups in this proceeding, LPP's comments reveal that these estimates are unsupportable. In their place, LPP offers a new estimated annual avian-tower mortality figure of 4.3 million, but its methodology suffers from many of the same defects found in the first discredited set of mortality calculations. The picture that emerges is a cloudy one, and without a credible set of mortality figures that demonstrate biological significance, further governmental action is unwarranted and unjustified.

⁸² For example, the regression analysis that is central to its projections is not described and has not been peer-reviewed, and no confidence limits accompany the results of the regression analysis. *See* Woodlot (5/07) Technical Report at 8-9. Furthermore, Tables 1, 2, 3 (first), and 3 (second), where LPP compiles the results of its analysis, present simple figures as its projections, rather than ranges with stated confidence limits. Table 1 also indicates that nearly all of the studies contributing to the regression involved tall towers, while the vast majority of the towers to which the regression was applied were short towers; 95.5% of the towers were represented by only 3 of the 30 towers contributing to the regression. This can lead to significantly biased results, a fact which LPP does not acknowledge or address. *See* Woodlot (5/07) Technical Report at 10.

⁸³ *See id.* at 1, 11.

⁸⁴ *See* LPP Report at 26.

C. The Evans/Manville Study

The Evans/Manville study, which has been peer-reviewed and was published in 2007, examined the degree to which migrating birds are attracted to various types of lighting during dense low-cloud conditions. The study, which was supported by FWS and co-authored by FWS's Senior Wildlife Biologist, Dr. Manville, compared the attraction of birds to red, green, blue, and white lights, with steady and flashing characteristics. Old Bird, Inc., which submitted the study in the record, said in its comments that the study confirmed other studies (including Dr. Gehring's Michigan study) showing that "flashing lights are safer for night-migrating birds than steady-burning lights," that the study's comparison of white light in flashing and steady configurations "suggest[s] that the flashing versus nonflashing parameter is of much more importance with regard to reducing bird losses than the color of the light," and that the study therefore supports the Commission's proposed preference for white strobe lighting over flashing red/steady red lighting.⁸⁵

The actual findings in the published, peer-reviewed study actually contradict both this characterization of the study's findings and the conclusion drawn from it. First, the study showed that the color of steady light was highly significant — steady white, blue, and green light sources resulted in a high level of bird attraction, while steady red light "did not."⁸⁶ Second, the results for flashing white light were comparable to those for steady red light, namely no attraction of birds was observed.⁸⁷ Third, the study found that bird attraction levels with (i) a steady white light versus (ii) a flashing red aviation beacon (L-864) alone versus (iii) a flashing

⁸⁵ Comments of Old Bird, Inc. at 1-2.

⁸⁶ Evans/Manville at 11, 12 (Figures 4a, 4b, 4c, 4e).

⁸⁷ Evans/Manville at 11, 12 (Figure 4c).

red aviation beacon in combination with a constant-on red aviation beacon (L-810) were all comparable to darkness. The study presents the results of this test graphically as follows:

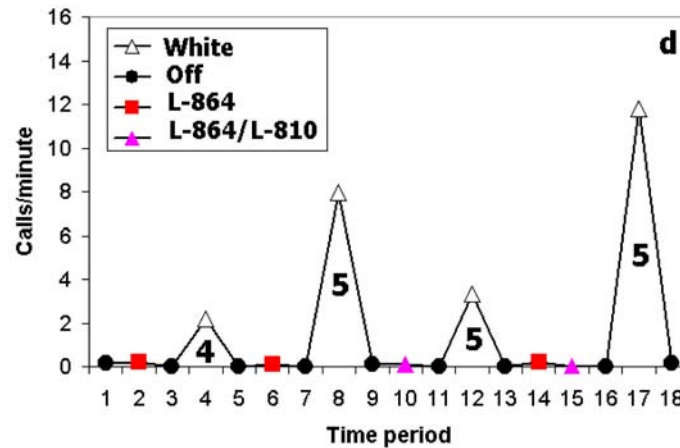


Figure 1.
Comparison of Steady White Light, Flashing Red Beacon, and
Flashing/Steady Beacon from Evans/Manville at 12 (Figure 4d)

The Evans/Manville study describes this result, in combination with its separate comparison of steady vs. flashing white light, as follows:

The calling rate during the flashing red beacon (L-864), the flashing red beacon (L-864) with the constant-on red beacon (L-810), and the flashing white light periods *was similar to the dark periods*. Figure 4d shows a sequence of four adjacent light cycles, in which the flashing red beacon did not induce aggregation by itself *or in combination with a low intensity, nonflashing, red beacon*.⁸⁸

The study confirms that “the data from our study very clearly indicate aggregation during the blue, green, and white light but not in red.”⁸⁹ It describes this finding as an “unexpected response to nonflashing red light”⁹⁰ that is “contrary to some prevailing beliefs that bird kills at

⁸⁸ Evans/Manville at 11 (emphasis added).

⁸⁹ Evans/Manville at 16.

⁹⁰ Evans/Manville at 16.

tall towers with red aviation obstruction lighting are specifically induced by the red nature of the light.”⁹¹ It concludes:

While our study showed neither white nor red flashing light to induce bird aggregation, the fact that our nonflashing red also did not induce aggregation suggests that, with equal irradiance, flash on-time, and flash rate, a flashing red light would be less of a stimulus to migrant birds than a flashing white light.⁹²

Given the study’s finding that flashing red and steady red light in combination do not attract birds, and its specific conclusion that flashing red light is less attractive to birds than flashing white light, Old Bird, Inc. is incorrect in arguing that the study supports the FCC’s proposed preference for flashing white tower lighting. The study notes that further research is needed.⁹³ Indeed, the study indicates that other possible factors concerning bird attraction to lighting — in addition to color and flashing vs. non-flashing — also require examination, including irradiance (light levels)⁹⁴ and flash cycle speed.⁹⁵ Woodlot concurs with the need for further research.⁹⁶

The Evans/Manville study highlights the danger the Infrastructure Group warned of in its comments — the reliance on incomplete scientific knowledge. Some prior research had

⁹¹ Evans/Manville at 17.

⁹² Evans/Manville at 21.

⁹³ *E.g.*, Evans/Manville at 22 (“Determining the relative importance of these variables for causing bird aggregation will require additional study. We look forward to further research into the parameters of wavelength and flash rate of lights toward reducing impact to night-migrating birds.”).

⁹⁴ *See id.* at 20 (“To further investigate vision-induced aggregation mechanisms, it will be important to identify how avian mesopic vision works as a function of light levels.”).

⁹⁵ *See id.* at 21 (“Experimentation is needed with faster flash rates and longer duration of individual flashes to see if bird aggregation behavior can be induced with other parameters of flashing light.”).

⁹⁶ *See* Woodlot (5/07) Technical Report at 13.

suggested that steady red light sources would be highly attractive to birds, but this study clearly calls into question the assumptions relied upon by advocates of avian-tower regulation. Even the principal author of the study (Dr. Evans, Old Bird, Inc.) appears unable to accept the implications of his own study, characterizing it as providing support for a regulatory approach that it actually undermines. While the study provides several potential theoretical explanations for its outcome,⁹⁷ none of those theories has been tested. Without further research, all the Commission can do is speculate.

D. FWS Comments

Woodlot's analysis of the FWS Comments indicates that FWS largely reiterates data previously found insufficient for finding that towers have a significant effect on avian mortality, and that "[v]ery little new scientific evidence is discussed."⁹⁸ FWS relies on the Michigan study and also references the Evans/Manville study, in which its Senior Wildlife Biologist collaborated, as well as a book by the authors of the LPP Report. Woodlot notes that the Evans/Manville study's "findings regarding different types of lighting and attractiveness to birds" conflict with FWS's own recommendations.⁹⁹ Much of the information relied on by the FWS is anecdotal in nature or cited to unpublished sources or personal communications.¹⁰⁰

⁹⁷ Evans/Manville at 17-20.

⁹⁸ See Woodlot (5/07) Technical Report at 12.

⁹⁹ See *id.* at 12.

¹⁰⁰ The pre-2005 "studies" cited by FWS had previously been analyzed by both Avatar and Woodlot; few of them were peer-reviewed, most were anecdotal and do not account for biases; and none of them were comprehensive scientific studies involving a wide variety of tower sizes and locations under controlled conditions. See Woodlot (5/07) Technical Report at 12 & n.10. Likewise, the post-2005 "studies" cited by FWS (other than Gehring's Michigan study and Evans/Manville) were nearly all anecdotal reports, not peer-reviewed studies, and these, too,

(footnote continued)

The lack of scientific rigor in FWS's evidentiary presentations is matched by its nonscientific estimates of avian mortality due to towers (ranging from 4-5 to 40-50 million birds annually). As discussed above, LPP's comments undermine any credibility these estimates may have been given, as we now know these estimates were the product of a scientifically insupportable extrapolation of decades-old data taken from only three towers.¹⁰¹

The Evans/Manville study is the only new information cited by FWS that has been peer-reviewed. FWS, however, downplays this 2007 lighting study, even though it was co-authored by Dr. Manville, Senior Wildlife Biologist at FWS's Division of Migratory Bird Management, because it concludes that, contrary to FWS's advocacy of white strobes,¹⁰² solid red lights are no more of an attractant than darkness and red strobes may be preferable to white.¹⁰³ Ultimately, FWS, one of the chief proponents of white strobes, concedes that in light of the Evans/Manville study additional research is needed.¹⁰⁴ The Infrastructure Coalition concurs.

In sum, FWS offers nothing new that could sustain new avian-tower regulation. FWS has previously stated that existing single tower mortality studies are "insufficient for the FCC to

(footnote continued)

were not comprehensive scientific studies. *See* Comments of FWS at 7-9; *see also* Woodlot (5/07) Technical Report at 12.

¹⁰¹ Not surprisingly, LPP retreats from the 40-50 million figure and now estimates mortality at one-tenth of that figure. *See* LPP Report at 2, 5.

¹⁰² *See* Comments of FWS at 19.

¹⁰³ Comments of FWS at 19.

¹⁰⁴ *See* Comments of FWS at 19 ("Evans *et al.* (2007), however, did not find either steady-burning red (L-810) or red flashing lights (L-864 beacons) induced bird aggregation Because of the challenges in sorting out the mechanism(s) of bird aggregation to artificial lights, the short duration of the Evans *et al.* study, and the lack of replication of this research, *more laboratory and field studies will be necessary to better understand aggregation to certain light types as well as the role of magnetoreception.*") (emphasis added).

change its rules and processes. Additional research is imperative.”¹⁰⁵ Its comments try to suggest that there have been new developments since that time that now warrant the FCC’s adoption of new regulations, but this is not the case. As Woodlot shows, (i) Evans/Manville undercuts, rather than supports, any argument for regulation; (ii) the Michigan study is too limited and has not yet been peer reviewed; and (iii) any remaining “new” sources are based on personal communications and the like and cannot be credited.¹⁰⁶

E. The Colorado Study

Citicasters filed comments that included a detailed study of avian mortality in the vicinity of a tall (500 ft), guyed tower, lighted with flashing/steady red beacons, in Colorado. Based on the results of the Michigan study, this tower would be expected to cause a high rate of avian mortality, due to its height and use of guy wires and steady red side lights. Over two years of study, however, only eleven birds were found; there were no large-scale avian mortality events (“mass kills”).¹⁰⁷

The study notes that it is “the first project of this type conducted in Colorado and one of less than 20 studies completed to date west of the Mississippi River.”¹⁰⁸ Some previous analyses have excluded western and southwestern regions because of little evidence concerning avian

¹⁰⁵ Comments of FWS at 6 (Nov. 2003) (“FWS (11/03)”). On February 2, 2007, FWS filed comments in this proceeding supporting a change in the FCC’s rules and processes, notwithstanding the need for additional research. *See* Comments of FWS at 12, 19, 28 (Feb. 2, 2007) (“FWS (2/07)”). FWS does not acknowledge the departure from its prior statement that existing research is “insufficient” and further research “imperative.” FWS (11/03) at 6. The Infrastructure Coalition will address the substantive merits of the recent FWS comments on reply.

¹⁰⁶ *See* Woodlot (5/07) Technical Report at 11-12.

¹⁰⁷ Colorado Study at 20-21, 28, Appendix A.

¹⁰⁸ Colorado Study at 5.

mortality near towers in those areas.¹⁰⁹ While the Colorado Study has limitations, *i.e.*, it is not peer-reviewed and is limited in scope, it does suggest strong regional differences regarding avian mortality. It thus provides another reason for caution in rushing to a speculative regulatory solution for a problem that may not exist.

II. PROPONENTS' SOLUTIONS MAY EXACERBATE AVIAN MORTALITY, HARM IMPORTANT PUBLIC GOALS AND ANTAGONIZE THE PUBLIC.

Not only do the new studies not warrant the adoption of avian-tower regulations, doing so may actually exacerbate avian mortality; harm air safety and public safety; threaten commercial service to the public; and run afoul of local preferences. For these reasons as well, avian-tower regulation should not be adopted.

A. The Proposed Lighting Solution Is Mired in Scientific Controversy and Is Contrary to the Public Interest.

The principal, short-term objective of the proponents of avian-tower regulation appears to be for the FCC to adopt regulations prescribing specified lighting schemes purportedly favorable to migratory birds.¹¹⁰ They propose that solid red lights (L-810s) be banned for new towers and phased out or eliminated for existing towers, in favor of white strobe lighting systems (L-865) as the preferred alternative or, where not feasible, red flashing lights (L-864s) as the secondary

¹⁰⁹ See, *e.g.*, LPP Report at 3 (excluding the West and Southwest Bird Conservation Regions from its analysis because they have not had substantial avian mortality reported at towers).

¹¹⁰ See Comments of LPP at 19 (“The lighting scheme of communications towers is probably the most important factor contributing to bird kills at towers that can be controlled by humans.”); Joelle Gehring at 2 (“[T]he changing of FAA obstruction lighting provides virtually the only means of reducing fatalities at existing towers.”); ABC at 78 (“[I]t is extremely important that the FCC act to prevent the use of [red steady burning lights] for night time conspicuity on new towers, but also require that existing towers that employ such lighting be modified.”).

alternative.¹¹¹ This request, however, is based on numerous hypotheses about avian safety which have yet to be proven, thus undercutting the FCC's ability to reach a reasoned conclusion or implement any solution. What is certain is that any FCC proposed lighting changes are unwarranted before the FAA has concluded its overall review of lighting arrangements for towers. Moreover, based on the comments in this proceeding, white strobes could endanger pilot safety and generate significant local opposition, as discussed below.

1. The Proposed Lighting Solution Is Not Supported By the Science.

As a threshold matter, even proponents of lighting regulation acknowledge the limited nature of the science concerning the role of lighting and avian-tower mortality. According to LPP, “[c]onclusive evidence is not available that the color of light affects bird attraction”¹¹² Similarly, Dr. Gehring acknowledges that “[t]here is little quantitative information about the relationship between the types of FAA lights on communication towers and the attraction of birds to those towers.”¹¹³ Given the dearth of “scientifically validated” avian-tower lighting studies, Dr. Gehring describes her 2007 Michigan lighting study as “the first to compare collision rates at communication towers equipped with different types of FAA obstruction lighting.”¹¹⁴ The contemporaneous lighting study by Evans/Manville, co-authored by FWS's Albert Manville,

¹¹¹ See Comments of ABC at 9-10, 13; FWS at 14-20; *see also* Joelle Gehring at 2.

¹¹² LPP Report at 20.

¹¹³ Gehring (4/07) Lighting Report at 11.

¹¹⁴ *Id.*

and published in a peer-reviewed journal,¹¹⁵ similarly describes itself as “the first direct investigation of [] artificial light variables for causing bird aggregation.”¹¹⁶

Yet, the results of these limited studies show that the science regarding bird attraction to tower lighting is in flux. As discussed above, these studies produced conflicting results that defied many predictions and cannot be reconciled without further research. Perhaps the greatest disparity concerns the prediction that elimination of the solid red L-810 lights is the single best lighting change that can be made to reduce avian-tower mortality. Dr. Gehring’s report supports this prediction, finding that “by extinguishing steady burning, red L-810 lights on towers . . . fatality rates could be reduced by as much as 50-70%.”¹¹⁷ By contrast, the 2007 Evans/Manville report, co-authored by Dr. Manville of FWS, found that solid red lights are *no more of an attractant to birds than darkness*, red strobes, or white strobes.¹¹⁸ Evans/Manville describes this “[u]nexpected response to nonflashing red light” as follows:

[T]he irradiance level and spectrum of our lights were very carefully measured, and the data from our study very clearly indicate aggregation during the blue, green, and white light *but not in red*. The possible reasons for this finding are complex and dependent on unknown mechanism(s) for aggregation *Our*

¹¹⁵ See Comments of Old Bird, Inc. at 1.

¹¹⁶ Evans/Manville at 2. A 2006 article by Sidney A. Gauthreaux, Jr. and Carroll G. Besler discusses the effects of night lighting on migratory birds, but relies upon prior anecdotal reports, estimates and extrapolation. See S.A. Gauthreaux, Jr. and C. Belser, *Effects of artificial night lighting on migrating birds* (2006) (in C. Rich, T. Longcore (eds.), *ECOLOGICAL CONSEQUENCES OF ARTIFICIAL NIGHT LIGHTING* (Island Press, 2006) (“Gauthreaux article”). While the article also examines the influence of tower lighting on migratory birds specifically, it relies largely on unpublished data, observations at a few towers in 1986, and personal communications. See Comments of the Infrastructure Coalition at 13-16. Such anecdotal reports, outdated findings and personal observations and communications cannot sustain new FCC regulation.

¹¹⁷ Gehring (4/07) Lighting Report at 11.

¹¹⁸ See Evans/Manville at 11 (“The calling rate during the flashing red beacon (L-864), the flashing red beacon (L-864) with the constant-on red beacon (L-810), and the flashing white light periods was similar to the dark periods.”).

*finding appears contrary to some prevailing beliefs that bird kills at tall towers with red aviation obstruction lighting are specifically induced by the red nature of the light.*¹¹⁹

Rather than face the implications of this disparity of scientific thought, ABC acknowledges Evans/Manville, but makes no mention of its finding concerning solid red lights.¹²⁰ For its part, FWS briefly recognizes the findings and calls for further research.¹²¹ As discussed below, the Infrastructure Coalition has joined with environmental groups in asking the FAA to examine whether solid red sidelights can be turned off without harm to air safety.¹²²

Even on the question of strobe lighting, the preliminary scientific studies have produced conflicting results. One study found white strobes should be the preferred alternative,¹²³ a second study (the Michigan study) concluded red strobes and white strobes were equally effective,¹²⁴ and yet a third study (Evans/Manville) demonstrated that red strobes were actually

¹¹⁹ Evans/Manville at 16; *see also id.* at 19 (“The red light results from our study do not correspond with the evidence from previous field studies in which red aviation obstruction lighting induced bird aggregation”); 20 (“This finding does not concur with the well-documented phenomenon of bird aggregation at tall towers with red aviation obstruction lights.”).

¹²⁰ *See* Comments of ABC at 92.

¹²¹ *See* Comments of FWS at 19 (stating that “more laboratory and field studies will be necessary to better understand aggregation to certain light types” and that “further research is needed, especially focused on blinking/strobe versus steady-burning lights, and on lighting color”).

¹²² *See infra* note 137 and accompanying text.

¹²³ *See* LPP Report at 22-24 (“Gauthreaux and Belser investigated the influence of light type on bird behavior around towers. . . . It provides additional scientific evidence that white strobe lights do not attract birds to towers and that strobe lights affect bird behavior less than solid red and flashing incandescent red lights”), *summarizing* Gauthreaux article, *supra* note 116 at 67-93. Gauthreaux and Belser reference observations from 1986 concerning bird behavior from only two sites in Georgia and two sites in South Carolina. *See* LPP Report at 23.

¹²⁴ Gehring (4/07) Lighting Report at 7 (“[T]here was no significant difference in the fatality rates among towers lit only with red strobes vs. white strobes vs. red incandescent flashing beacons.”) Gehring’s study was based on examination of 24 towers in Michigan and “did not

(footnote continued)

preferable.¹²⁵ Each of these studies is based on examination of a limited number of towers and/or site locations without a wide variety of heights and locations, and the Michigan study is not yet peer-reviewed, so further research is necessary to determine whether the color of the strobe is a factor in avian fatalities under some conditions, all conditions or no conditions.¹²⁶

The avian scientific community is unsure as to whether white strobes should be the preferred alternative or whether any lighting change is even needed. The conflicting and preliminary nature of the science highlights the danger of rushing to judgment to prefer any particular lighting scheme, even with the best of intentions. As the Evans/Manville study demonstrates, there is a real risk that any “solution” at this stage would be, at best, ineffective or, at worst, more harmful to birds than the status quo, and could well prove to be extremely expensive. Thus, it would be arbitrary and capricious for the FCC to mandate or prefer a particular lighting scheme. The better course is to first gather more comprehensive, peer-reviewed research and then, based on the research results, decide whether any action is appropriate.

(footnote continued)

test whether similar light changes on taller towers (greater than 147 m AGL) reduced fatalities at those towers.” *Id.* at 12. It acknowledges that “[s]tudies of how the lights on taller towers impact fatality rates should be the focus of further research.” *Id.* at 13. The study has not yet been peer-reviewed.

¹²⁵ See Evans/Manville at 21 (finding that “a flashing red light would be less of a stimulus to migrant birds than a flashing white light”). Evans/Manville examined bird aggregation at a ground-based light source in dense cloud cover. See *id.* at 2.

¹²⁶ Some commenters also call for regulation of ground-based lighting sources, *e.g.*, around equipment sheds and compound fencing. See, *e.g.*, Comments of ABC at 10. Such requests are beyond the scope of the *NPRM* and this proceeding. Moreover, there is insufficient evidence in the record regarding the efficacy of extinguishing ground-based lighting, which is generally used to address concerns of the local community with respect to public safety and security.

2. The Proposed Lighting Solution May Compromise Air Safety and Is at Odds with Local Preferences.

The record also demonstrates that the proposed lighting solution may compromise air safety and conflict with the lighting preferences of many local communities. Each of these concerns provides an independent basis for not adopting the proposed lighting solution.

First, the FAA has concluded that white strobes are an air safety issue. The FAA has long stated that white strobes are not recommended for towers below 200' or located near airports or in urban areas "due to their tendency to merge with background lighting in these areas at night."¹²⁷ Recently, the FAA conducted a conspicuity study concerning lighting and wind power turbines (which can approach nearly 450 feet in height), and discovered that white strobe lights can be a distraction to pilots more generally and therefore may adversely affect safe navigation: "Research showed that the white strobes were very distracting to pilots, due to the quick flash exposure and bright appearance."¹²⁸ Based on this finding, the FAA recently revised its advisory circular to prefer *red* strobe lighting over white strobes for wind turbines.¹²⁹ This recent finding undermines any continuing reliance on the FAA's 2004 memo, which had agreed, on an interim basis, to recommend the use of white lights rather than red lights for towers only so

¹²⁷ FAA, Advisory Circular AC 70/7460-1K, Obstruction Marking and Lighting, at 17 (eff. Feb. 1, 2007) ("AC 70/7460-1K"). According to the FAA, this makes it "extremely difficult for some types of aviation operations, i.e., med-evac, and police helicopters to see these structures." *Id.*

¹²⁸ James W. Patterson, FAA, *Development of Obstruction Lighting Standards for Wind Turbine Farms*, DOT/FAA/AR-TN05/50, at A-2 (Nov. 2005) ("FAA Wind Turbine Study").

¹²⁹ AC 70/7460-1K at 33.

long as a “hazardous condition for pilots” was not created.¹³⁰ Other commenters have raised similar air safety concerns, indicating that white strobe lighting “poses a serious detriment to depth perception and spacial orientation” when flying near towers equipped with such lighting.¹³¹

Second, there is widespread agreement that white strobes are disliked by many municipalities and local communities for aesthetic reasons. For example, representatives of public safety organizations have expressed concern that the proposed white strobe preferred solution could make the tower siting for public safety facilities much more difficult given “local resistance to white strobe lights.”¹³² In addition, commenters representing avian groups, telephone companies, broadcasters and wireless carriers detailed widespread community opposition to white strobe lighting.¹³³ Indeed, the FAA’s advisory circular concerning tower lighting specifically notes that the use of a white strobe lighting system “in urban and rural areas

¹³⁰ April 6, 2004 Memorandum from the FAA’s Program Director for Air Traffic Airspace Management, ATA-1, Sabra W. Kaulia, to Regional Air Traffic Division Managers (“2004 FAA Memorandum”).

¹³¹ Comments of St. Tammany at 1 (Mar. 5, 2007); *see also* Comments of LMCA at 1 (noting that pilots will often avoid areas with white-strobe-lit towers to ensure their safety, leaving large areas of mosquito-infested areas to go untreated).

¹³² National Public Safety Telecommunications Council at 6; *see* Comments of the Infrastructure Coalition at 46-47 (citing public safety record).

¹³³ *See* Comments of Joelle Gehring at 2 (“[T]here is commonly general public disapproval of [white strobe] systems perceived to be aesthetically disruptive.”); ABC at 93 (acknowledging “problems the industry sometimes has with employing white strobes on communications towers because of local opposition”); NTCA at 8 (“Municipalities have repeatedly insisted that rural carriers comply with local siting rules, and those rules often include directives that require slow red pulsing lights for towers that must be lit, rather than fast white strobing lights. . . . Communities that prefer to satisfy human visual impacts over bird visual impacts will find it difficult to understand the need for white strobing lights.”); State Broadcasters at 11 (noting that “white strobe lights can pose a visual nuisance to neighboring homes, thereby making it difficult for communications entities to obtain permission to construct towers in urban and suburban areas,” leading to “loss of service”); *see also* Comments of the Infrastructure Coalition at 46-47 (citing record).

often results in complaints.”¹³⁴ In light of this widespread local opposition, the establishment of any white strobe requirement or preference could delay or even prevent the continued expansion of needed infrastructure — and the valuable services it supports for the benefit of the public — in many areas.

As an alternative strategy, proponents of avian-tower regulation propose the use of red strobe lighting instead of white strobe lighting,¹³⁵ while acknowledging that the FAA does not currently prescribe red strobe lighting for towers without solid red sidelights.¹³⁶ As the Infrastructure Coalition noted in its comments, infrastructure and environmental groups have jointly requested the FAA to examine whether solid red sidelights can be eliminated without harming air safety.¹³⁷ The Infrastructure Coalition understands that the FAA intends to conduct a broad-based conspicuity study examining the efficacy of all of its current lighting guidelines for towers on a going forward basis, including whether red sidelights (L-810s) can be safely eliminated,¹³⁸ and supports those efforts. While the results of the wind/turbine study indicate that it may be possible to safely turn off the red sidelights on towers, any FCC regulation in this area is unwise until the FAA completes its review, as red strobe lighting is not currently permitted by the FAA without solid red side lights.

¹³⁴ AC 70/7460-1K at 17.

¹³⁵ See Comments of FWS at 18; Comments of ABC at 10.

¹³⁶ See Comments of FWS at 17; Joelle Gehring at 2.

¹³⁷ See Letter to Rick Marinelli, Manager, Airport Engineering Division, FAA from Anne Perkins, Manager, Industry Affairs, PCIA et al., Joint Request for Conspicuity Study (Feb. 15, 2007).

¹³⁸ For example, the recent wind turbine conspicuity study indicates that solid red L-810s go virtually unnoticed by aircraft until the aircraft is within very close proximity (2-3 miles), *see* FAA Wind Turbine Study at A-2, suggesting that they may be able to be safely eliminated on towers following further study.

The comments of Dr. Gehring crystallize the multifaceted issues surrounding altering lighting requirements:

Currently, the only FAA approved nighttime lighting system that lacks steady-burning, L-810 lights is the white strobe light system (L-865). While white strobe systems provide an FAA approved option to significantly reduce avian collisions, there is commonly general public disapproval of these systems perceived to be aesthetically disruptive. In addition, converting communication towers with traditional lighting systems to white strobe systems can be costly for tower companies. Because guyed towers (or guy wires of those towers) now standing are not likely to be removed from the landscape and tower heights are unlikely to be altered, the changing of FAA obstruction lighting provides virtually the only means of reducing fatalities at existing towers. I encourage the FAA to evaluate whether towers lit with only blinking red lights provide adequate safety to airmen. If so, I encourage the FAA to amend their current lighting recommendations to include an option for tower lighting systems with blinking red lights and no steady-burning L-810 lights.¹³⁹

Under these circumstances, the promulgation of additional lighting regulation by the FCC would be arbitrary and capricious. Further research is necessary concerning whether, and the extent to which, tower lighting plays a role in avian-tower mortality, as well as whether lighting changes can even be prescribed from an air safety standpoint.¹⁴⁰

B. Imposing Restrictions on Tower Heights and/or Guyed Towers Is Not Supported by the Record and Would Harm Service to the Public.

Woodlot has previously demonstrated that there is insufficient data available to draw definitive conclusions about migratory bird collisions with guyed and tall towers.¹⁴¹ The

¹³⁹ Comments of Joelle Gehring at 2.

¹⁴⁰ Further, the promulgation of regulations by the FCC permitting solid red L-810 sidelights to be shut off prior to the FAA concluding its conspicuity study would usurp the FAA's authority as the agency charged with assuring our nation's air safety.

¹⁴¹ See Woodlot (2/05) Technical Report at 6.

attached Woodlot Technical Report demonstrates that nothing has changed to alter that conclusion. The data are still insufficient.¹⁴²

The Michigan tower height/guy-wire study is described by its author as the “*first* controlled . . . study to examine the relative risks that tower support systems and tower height pose to migrating and other birds.”¹⁴³ While the study suggests some trends with respect to the 24 towers studied, it “did not observe any large bird fatality events,” consistent with “the documented decrease in large bird fatality events since the early 1980s.”¹⁴⁴ Moreover, the pool of towers studied represents too small a sample size with insufficient height and geographic-area diversity for the study’s findings to apply more broadly. Dr. Gehring acknowledges as much, stating that “tower studies conducted in other geographic settings would be valuable for replication and validation of our results”¹⁴⁵ and “future research . . . should examine tower heights between 146 m and 305 m AGL, as well as towers shorter than 116 m and taller than ~350 m AGL.”¹⁴⁶ Additional research is also needed, according to Dr. Gehring, to “determine if there is a critical tower height below which birds do not collide with great frequency,” as well as research into the use of markers to reduce any effects of guy wires on birds.¹⁴⁷

The need for more diverse studies concerning any role tower height and/or guyed towers may prove to play in avian mortality is highlighted by the Colorado study results. While involving only a single tower, the tower is both tall (500 feet above ground level) and guyed, and

¹⁴² See Woodlot (5/07) Technical Report at 1, 7-8.

¹⁴³ Comments of Joelle Gehring at 5.

¹⁴⁴ Gehring (4/07) Height/Guy Wire Report at 10.

¹⁴⁵ Gehring (4/07) Height/Guy Wire Report at 11.

¹⁴⁶ *Id.* at 11.

¹⁴⁷ Comments of Joelle Gehring at 6.

its lighting system includes solid red sidelights. Yet, defying predictions of high mortality rates for a tower with all the characteristics proponents of regulation would seek to regulate, only 11 bird fatalities were detected over a two-year period (and none of those birds was endangered).¹⁴⁸ Thus, further research is needed to determine the role of geography and other factors and whether either the Michigan study or the Colorado study results are representative across a broader area and more diverse tower height sample size.

Another reason for not rushing to adopt height-based rules is the effect that the restrictive tower regulations may have on communications facilities serving rural America, including facilities that are essential to homeland security and public safety. For example, the South Dakota Public Utilities Commission strongly opposed restricting the height of towers to 200 feet, which would require more towers to cover the same area and at greater cost, effectively deterring providers from offering needed coverage:

If restrictions on taller towers are adopted, *these restrictions would have a negative impact on South Dakota*. . . . Understanding the considerable investment a wireless provider makes when constructing a new tower, it is unlikely the provider would be willing to place three times the number of shorter towers in South Dakota when one taller tower would provide the same service. . . . *[P]roviders would erect fewer towers in South Dakota and the state's economic development, public safety and quality of life would suffer.*¹⁴⁹

The Governor of South Dakota also filed comments emphasizing that due to South Dakota's rural nature, "a large portion of our population and geography is underserved," and he unequivocally opposed tower height limitations.¹⁵⁰

¹⁴⁸ See Colorado study at 20.

¹⁴⁹ Comments of SDPUC at 2 (emphasis added).

¹⁵⁰ Comments of Governor Rounds at 1.

The public safety community likewise opposes restrictions on tower height, which would force the construction of more shorter towers to cover the same area at costs that may be prohibitive. One such group eloquently states the case against height restrictions:

[L]owering the height of a tower reduces a signal's reach. It means that an emergency dispatch cannot reach the incident location; it means that responding officers cannot radio for assistance. . . . The height of those towers and where they are located is inextricably linked to covering an entire geographic area.

. . . Costs make additional but lower height towers cost prohibitive. *Requiring multiple towers will not result in reduced service, but no service at all to many. Restricting heights of public safety towers will impede emergency response.*¹⁵¹

Unwarranted regulation of guy-wire towers could also have adverse consequences not justified by the current state of the science. As the National Public Safety Telecommunications Council further explains:

Guy wire infrastructure does provide a more cost effective alternative in many circumstances. . . . *In many environments guy wires are the only means to provide for a transmission/repeater facility.* Guy wires are deployed based on the topography and soil conditions of a location that is the only reasonable site given the coverage requirement.¹⁵²

For these reasons, various state representatives have cautioned against regulations that would limit the use of guyed towers, noting that taller towers needed for coverage purposes in rural areas often require guy wires due to windy conditions.¹⁵³

Finally, even assuming *arguendo* guy-wire towers play a disproportionate role in avian-tower mortality, guy wire towers represent a much smaller proportion of all towers nationwide

¹⁵¹ Comments of the National Public Safety Telecommunications Council at 4-5 (emphasis added).

¹⁵² *Id.* at 5 (emphasis added).

¹⁵³ *See, e.g.,* Comments of the SDPUC at 2-3; Governor Rounds at 1.

than the dated (and possibly erroneous) data cited by ABC suggests. In its comments, ABC represents that, based on 2002 data, there were 52,579 guyed towers in the United States, comprising 31 percent of all towers nationwide.¹⁵⁴ Among towers greater than 400 feet tall, ABC claims that nearly 80% are guyed, citing the same 2002 data.¹⁵⁵ According to ABC, the 2002 data was obtained from Fryer's *Site Guides* which, in turn, were used to create the *TowerSource* database acquired by Biby Publishing in 2005. The Infrastructure Coalition, however, contacted *TowerSource* to obtain updated tower data for 2007, which reveals that of the 188,744 towers in the United States today, only 16,417 — or **9%** — of all towers are guyed. Even more revealing, among towers greater than 400 feet tall, only **25%** are guyed — far less than the 80% claimed by ABC. Below is a summary of the current data, as reported to The Infrastructure Coalition by *TowerSource*:

May 2007	All	Guyed	% Guyed
Towers in USA	188,744	16,417	9%
Towers >= 1000 ft AGL	17,085	4,680	27%
Towers >= 501 ft AGL and <= 999 ft AGL	15,974	3,366	21%
Towers >= 401 ft AGL and <= 500 ft AGL	4,682	1,226	26%
Towers >= 201 ft AGL and <= 400 ft AGL	18,753	4,034	22%
Towers <= 200 ft AGL	132,250	3,111	2%

As the above table demonstrates, guyed towers are not the dominant structure type for telecommunications towers that ABC believes them to be. Thus, ABC significantly overestimates any alleged role that guyed towers may play in avian-tower collisions. What is

¹⁵⁴ See Comments of ABC at 23 & Attachment "Towers under 200 feet." Specifically, ABC claims there are 84,064 towers less than 200 feet in height, of which 10% are guyed; 70,616 towers 200-400 feet, of which 45% are guyed; 9,892 towers 401-500 feet, of which 75% are guyed; 3,838 towers 501-999 feet, of which 87% are guyed; and 1,677 towers 1,000 feet or higher, of which 98% are guyed. *Id.*

¹⁵⁵ See *id.* According to ABC, there are 15,407 towers that exceed 400 feet in height, of which 12,401, or approximately 80%, are guyed. *Id.*

clear is that there are certain conditions in which guyed towers provide the only feasible method for the provision of telecommunications services to the public.

C. Other Restrictions Are Plainly Unwarranted.

The Commission's *NPRM* seeks comment on other possible ways to reduce avian mortality. For example, it asked whether the Commission should "promote" collocation through new requirements.¹⁵⁶ While the Infrastructure Coalition supports collocation whenever reasonably feasible (on technical, coverage, and economic grounds), no new rules or requirements are needed. Licensees are well aware that collocation is an option that should be explored when they are considering a new or relocated antenna site. The combination of the 2001 Collocation Agreement,¹⁵⁷ market forces, and local siting requirements already promote collocation extremely well.¹⁵⁸ Indeed, ABC candidly admits that "the nation's largest tower construction companies are already pursuing collocation, as are wireless providers."¹⁵⁹ Thus, there is no need for any rules to "promote" collocation through certifications or otherwise.¹⁶⁰

¹⁵⁶ *NPRM*, 21 F.C.C.R. at 13267.

¹⁵⁷ *See Execution of Programmatic Agreement with respect to Collocating Wireless Antennas on Existing Structures*, 16 FCC Rcd 5574 (WTB 2001), *recon. denied*, 20 FCC Rcd 4084 (WTB 2005).

¹⁵⁸ *See, e.g.*, Comments of the National Public Safety Telecommunications Council at 6 ("The *NPRM* also inquires whether there should be a mandate to collocate antenna and tower facilities absent a certification requirement that collocation opportunities are not available. NPSTC questions whether this is necessary. *The investment required, the zoning approvals needed and community resistance impose enormous incentive to collocate facilities.*") (emphasis added).

¹⁵⁹ Comments of ABC at 79.

¹⁶⁰ *See, e.g.*, Comments of DoW at 11.

Similarly, there is no need or basis for rule revisions that would subject more towers to environmental processing.¹⁶¹ To the contrary, the imposition of any such obligations, including the proposal to expand the criteria pursuant to which an EA would be required, would harm the ability of public safety and industry to enhance and deploy additional infrastructure and the services which are vital to the public. As one commenter explains:

[A]ny process requiring licensee analysis and advocacy and Commission examination entails significant expense and delay. NPSTC urges the Commission to consider the significant negative results that will flow from prohibiting guy wires or imposing a lengthy approval process.

The same caution applies to the Commission's suggestion that it routinely require an Environment Assessment and determination for all towers exceeding 200 feet. The time, expense and delay will present insurmountable barriers to making improvements. *The costs of a communications system should relate to the infrastructure and equipment, not legal and processing costs.*¹⁶²

The Infrastructure Coalition agrees. To the extent any justified avian-tower concerns are presented with respect to a particular project's height and/or proposed use of guy wires, the FCC's rules already provide a means for an interested party to bring those concerns to the FCC's attention.¹⁶³ This case-by-case approach to addressing any such concerns should not be changed.

Finally, monitoring requirements or reporting obligations should not be imposed.¹⁶⁴ Even assuming *arguendo* the science and the law supported monitoring requirements, they are impractical and therefore contrary to the public interest. For example, third party access to tower

¹⁶¹ See *NPRM*, 21 F.C.C.R. at 13268-69.

¹⁶² Comments of the National Public Safety Telecommunications Council at 6.

¹⁶³ Under Section 1.1307(c) of the FCC's rules, an interested person may petition the Bureau responsible for processing a particular action to require environmental consideration, where such consideration would not otherwise be required by the rules. See 47 C.F.R. § 1.1307(c).

¹⁶⁴ See, e.g., Comments of ABC at 9-10, 13; FWS at 31.

sites is generally strictly limited due to safety and security concerns and for insurance liability purposes. Moreover, in some cases, access to a tower site is by way of a narrowly-defined easement that may not include other surrounding areas (presumably relevant to avian monitoring) and in any event may be limited by agreement with the landowner to only the tower owner and its agents.

As the foregoing demonstrates, there is no *scientific* basis for the FCC to promulgate avian-tower regulations. Of equal importance, there is no *legal* basis for the FCC to proceed, as discussed in Section III, below.

III. PROPONENTS FAIL TO PROVIDE A VALID BASIS FOR THE FCC TO REGULATE MIGRATORY BIRD ISSUES.

The proponents of FCC avian-tower regulation also fail to demonstrate that the FCC has legal authority to regulate such activities. They cite several purported sources for such authority, including: the MBTA;¹⁶⁵ Executive Order 13186 (“E.O. 13186”),¹⁶⁶ which implements the MBTA; NEPA;¹⁶⁷ and the ESA.¹⁶⁸ These sources do not provide the FCC with the requisite delegated authority to adopt the regulations they advocate. Moreover, even if the FCC were

¹⁶⁵ 16 U.S.C. §§ 703-712; *see* Comments of DoW at 6-7; ABC at 40-55; FWS at 3, 6.

¹⁶⁶ Executive Order 13186 of January 10, 2001, Responsibilities of Federal Agencies to Protect Migratory Birds, 66 Fed. Reg. 3853 (Jan. 17, 2001); *see* Comments of FWS at 5; ABC at 51; DoW at 7, 8.

¹⁶⁷ 42 U.S.C. §§ 4321-75; *see* Comments of ABC at 20-24; Comments of FWS at 4.

¹⁶⁸ 7 U.S.C. § 136, 16 U.S.C. §§ 1531-44; *see* Comments of ABC at 35-40; *see also* Comments of FWS at 3, 11; Comments of DoW at 2, 5.

otherwise authorized to engage in such regulation, the Data Quality Act (“DQA”)¹⁶⁹ forecloses the FCC from adopting regulations or policies based on the record in this proceeding.

A. The Migratory Bird Treaty Act Provides No Basis for FCC Regulations.

1. The MBTA Does Not Authorize the FCC to Adopt Avian Mortality Regulations.

Although several commenters cite the MBTA as a basis for FCC avian protection regulations,¹⁷⁰ the law clearly authorizes only one agency to adopt such regulations — the Department of the Interior (“DOI”).¹⁷¹ They also fail to acknowledge that the MBTA assigns exclusive responsibility for enforcement to DOI.¹⁷² If Congress had intended to give other federal agencies the authority to promulgate regulations to carry out the objectives of the MBTA, it would have done so explicitly, as it has done in other statutes such as NEPA and ESA.¹⁷³ Agencies such as the FCC have only such delegated authority as Congress has conferred. They cannot adopt regulations concerning subjects over which Congress has given them no authority.¹⁷⁴ Therefore, there is no basis for regulation by the FCC under the MBTA.

¹⁶⁹ Treasury and General Government Appropriation Act for Fiscal Year 2001, Pub. L. No. 106-554, § 515 Appendix C, 114 Stat. 2763A-153 (2000).

¹⁷⁰ See Comments of DoW at 6-7; ABC at 40-55; FWS at 3, 6.

¹⁷¹ See 16 U.S.C. § 704(a) (directing the Secretary of the Interior, with the concurrence of the President, to “adopt suitable regulations” permitting and governing the “hunting, taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export” of migratory birds).

¹⁷² See 16 U.S.C. § 706.

¹⁷³ See *Touche Ross & Co. v. Redington*, 442 U.S. 560, 575-79 (1979); *ITT World Communications, Inc. v. FCC*, 725 F.2d 732, 743 (D.C. Cir. 1984); cf. NEPA, 42 U.S.C. § 4332; ESA, 16 U.S.C. § 1531(c)(1).

¹⁷⁴ See *American Library Association v. FCC*, 406 F.3d 689, 705 (D.C. Cir. 2005); *Motion Picture Association of America v. FCC*, 309 F.3d 796, 801 (D.C. Cir. 2002). Furthermore, it would be contrary to the explicit structure of the MBTA for the FCC to adopt implementing

(footnote continued)

2. The FCC Is Not Subject to the MBTA.

No court has held that independent agencies may adopt regulations to implement the MBTA. Moreover, there is a split among the circuits as to whether government agencies are even subject to the MBTA in carrying out their statutory responsibilities. Some proponents of regulation¹⁷⁵ rely on a decision on the minority side of that split, the D.C. Circuit's *Glickman* decision,¹⁷⁶ without any meaningful analysis of the other circuits' decisions.¹⁷⁷ *Glickman*, however, does not support FCC regulation of avian mortality. Nothing in that decision addresses whether government agencies other than DOI may regulate avian mortality, or whether such an agency is required to consider the effects of actions by its regulatees on birds. The case, instead, involved a plan by the U.S. Department of Agriculture to engage directly in the extermination of

(footnote continued)

regulations. Congress gave the President ultimate authority over all regulations implementing the MBTA that are adopted by DOI, thereby confirming that such regulations are to be exclusively under Executive Branch control. 16 U.S.C. § 704(a). The FCC is an independent agency outside the Executive Branch and its regulations cannot be subject to Presidential approval. *See, e.g., Consumer Energy Council v. Federal Energy Regulatory Administration*, 673 F.2d 425, 472 (D.C. Cir. 1982) (“[T]he President, as representative of the Executive, does not have a claim to control the decisionmaking of independent agencies.”), *aff’d mem. sub nom. Process Gas Consumers Group v. Consumer Energy Council*, 463 U.S. 1216 (1983). Thus, FCC promulgation of avian protection regulations would be contrary to the express statutory scheme of Executive Branch control that Congress established to carry out the responsibilities of the United States under international treaties.

¹⁷⁵ *See* Comments of ABC at 42; Comments of DoW at 6-7. They also cite that the Supreme Court “assumed” that agencies are subject to the MBTA in *Robertson v. Seattle Audubon Society*, 503 U.S. 429 (1992). In the latter case, there is no mention of the issue at all, and it is not possible, therefore, to draw any conclusions as to the Court’s view.

¹⁷⁶ *Humane Society of the United States v. Glickman*, 217 F.3d 882, 887-88 (D.C. Cir. 2000) (“*Glickman*”).

¹⁷⁷ *See* Comment of Infrastructure Coalition at 25 & n.85 (citing *Sierra Club v. Martin*, 110 F.3d 1551, 1555-56 (11th Cir. 1997) (“*Martin*”); *Newton County Wildlife Ass’n v. U.S. Forest Service*, 113 F.3d 110, 115 (8th Cir. 1987) (“*Newton County*”)).

Canadian geese. The court held only that the MBTA's prohibition of the killing of migratory birds rendered it unlawful for the agency itself to engage in the direct killing of geese.¹⁷⁸

The D.C. Circuit recognized that two other circuits — the Eighth Circuit in *Newton County* and the Eleventh Circuit in *Martin*¹⁷⁹ — had previously taken the position that government agencies were not subject to MBTA. The court distinguished the other circuit's opinions, however, because they involved the harvesting of timber, which plays only an *indirect* role in avian mortality. The court acknowledged that both the Eighth Circuit, in *Newton County*, and the Ninth Circuit, in *Seattle Audubon*,¹⁸⁰ held that the MBTA does *not* apply to actions that only indirectly lead to avian deaths.¹⁸¹ In particular, the court cited *Newton County* with approval for its holding that the MBTA “does not prohibit ‘conduct, such as timber harvesting, that indirectly results in the death of migratory birds.’”¹⁸²

Even if the FCC had the authority to act in some circumstances, *Glickman* cannot be relied upon to support application of the MBTA to the tower siting and construction process because, unlike the Department of Agriculture in *Glickman*, the FCC is not directly engaging in the killing of migratory birds. It is at most tangentially involved in tower siting and construction

¹⁷⁸ 217 F.3d at 888. Even FWS, which did not cite *Glickman*, appears to recognize that the MBTA applies only to agency actions resulting directly in the killing or taking of birds. See Comments of FWS at 6 (“We also note that the fact that the MBTA applies to some unintentional take does not mean that it applies to all unintentional take. See *Seattle Audubon Society v. Evans* [citation omitted] (making a distinction between ‘direct’ and ‘indirect’ unintentional take).”).

¹⁷⁹ *Newton County*, 113 F.3d at 115 (“We agree with the Forest Service that MBTA does not appear to apply to the actions of federal government agencies.”); *Martin*, 110 F.3d at 1555-56 (“The MBTA does not apply to the federal government.”).

¹⁸⁰ *Seattle Audubon Society v. Evans*, 952 F.2d 297, 302 (9th Cir. 1991).

¹⁸¹ 217 F.3d at 888.

¹⁸² *Id.* (quoting *Newton County*, 113 F.3d at 114).

activities that *may* have an *indirect*, secondary effect of contributing to avian mortality in some cases.¹⁸³ The *Glickman* opinion makes clear that the case before the court did not involve such indirect effects on birds and cites two circuits' opinions for the proposition that the MBTA does not apply to such effects.

Glickman, at most, stands for the proposition that the FCC would be subject to the MBTA only if it took actions for the purpose of directly exterminating migratory birds. In *Glickman*, the court cites approvingly to other circuits that held that the MBTA does not apply to agency actions that — like tower siting and construction — affect avian mortality only as an indirect side effect. *Glickman* does not even suggest that an agency other than DOI has authority under the MBTA, or is implicitly required by it, to adopt regulations to prevent avian mortality occurring as an indirect side effect of carrying out its core statutory responsibilities.

3. Cases Concerning Intent Are Inapposite.

Regulation proponents also cite numerous lower court decisions in an attempt to bolster their case, yet none of these decisions supports the adoption of avian-tower regulations. The *Pirie* case, for example, followed *Glickman* and held only that the MBTA applies to the death of birds resulting directly from the Navy's live fire training exercises; it was subsequently vacated as moot by the D.C. Circuit.¹⁸⁴

¹⁸³ As explained in the Infrastructure Coalition's comments, with limited exceptions, FCC involvement in the tower siting and construction process in the geographically-licensed services is limited to registration of only those towers that require notice to the FAA. Even in the case of broadcast towers not involving minor changes, the agency does not make siting decisions. See Comments of the Infrastructure Coalition at 18-20.

¹⁸⁴ *Center for Biological Diversity v. Pirie*, 191 F. Supp. 2d 161 (D.D.C. 2002), *vacated sub nom. Center for Biological Diversity v. England*, 2003 U.S. App. Lexis 1110 (D.C. Cir. 2003) (cited in Comments of ABC at 44-46 and Comments of DoW at 6, in both cases without mention of its *vacatur*).

The other decisions cited by regulation proponents do not involve application of the MBTA to agencies, or even to indirectly-caused avian mortality. Rather, these cases stand for the very different proposition that the MBTA applies to actions that directly result in avian mortality, even if killing birds was unintended. *Moon Lake*, cited by ABC, DoW, and FWS, did not involve application of the MBTA to a government agency, much less whether an agency other than DOI may promulgate regulations concerning avian mortality. Instead, it held that no specific intent to kill birds was required in a criminal prosecution under the MBTA and that a conviction requires proof that the act be the proximate cause of birds' death.¹⁸⁵ The other cases cited also held that no specific intent is needed.¹⁸⁶ As the Ninth Circuit held in *Seattle Audubon*, the reasoning in cases holding that the MBTA applies to acts that directly, but unintentionally, kill birds is "inapposite" to the issue of whether acts that only indirectly lead to bird deaths are covered by the MBTA.¹⁸⁷

¹⁸⁵ *United States v. Moon Lake Electric Association*, 45 F. Supp. 2d 1070 (D. Colo. 1999) (cited in Comments of ABC at 47-48, Comments of DoW at 6, and Comments of FWS at 6).

¹⁸⁶ See cases cited in Comments of ABC at 48-49. As ABC acknowledges, these cases involved "direct, though unintended, bird poisonings from toxic substances." See *id.* (emphasis added) (citing *United States v. FMC Corp.*, 572 F.2d 902 (2d Cir. 1978) (wastewater dumping); *United States v. Corbin Farm Serv.*, 444 F.Supp. 510 (E.D. Cal. 1978) (pesticide application)). Three other cases cited by ABC are unreported but plainly do not involve the application of the MBTA to agencies. See *United States v. Stuarco Oil Co.*, 73-CR- 129 (D. Colo. 1973) (oil company failure to properly build oil sump pit); *United States v. Union Texas Petroleum*, 73-CR-127 (D. Colo. 1973) (oil company failure to properly maintain oil sump pit); *United States v. Equity Corp.*, Cr. 75-51 (D. Utah 1975) (same). None of these cases involves agencies or even incidental, indirect avian deaths occurring as a result of collisions with towers. See *Seattle Audubon*, 952 F.2d at 302 (rejecting the imposition of liability under the MBTA for indirect causation); *Newton County*, 113 F.3d at 115 (same); see also *Mahler v. U.S. Forest Service*, 927 F. Supp. 1559, 1579-80 (S.D. Ind. 1996); *U.S. v. WCI Steel, Inc.*, 2006 U.S. Dist. LEXIS 55593 at *11 (N.D. Ohio 2006).

¹⁸⁷ See *Seattle Audubon*, 952 F.2d at 303. ABC further argues that the FCC can be found in violation of MBTA due to its registration of some towers, based on the reasoning of *Strahan v. Coxe*, 127 F.3d 155, 163 (1st Cir. 1997) ("*Strahan*") (cited in Comments of ABC at 49).

(footnote continued)

B. E.O. 13186 Is Inapplicable to the FCC.

The proponents of avian-tower regulation claim that E.O. 13186 requires the FCC to take steps to implement the MBTA¹⁸⁸ — yet that provision explicitly does not apply to independent agencies like the FCC. E.O. 13186 requires “federal agencies” to take certain steps, but it specifically defines a “federal agency” as follows: “‘Federal agency’ means an executive department or agency, but does not include independent establishments as defined by 5 U.S.C. § 104.”¹⁸⁹ Section 104, in turn, defines an “independent establishment” as “an establishment in the executive branch . . . which is not an Executive department, military department, Government corporation, or part thereof, or part of an independent establishment.”¹⁹⁰ While the FCC is neither an executive department nor executive agency,¹⁹¹ “the Commission . . . is an ‘independent establishment.’”¹⁹² Accordingly, E.O. 13186 has no relevance to the FCC’s authority or responsibilities regarding migratory birds.

(footnote continued)

Strahan, however, is an ESA case that examined whether state commercial fishing regulations exacted a taking on an endangered whale, and is thus inapposite to any MBTA discussion.

¹⁸⁸ See Comments of FWS at 5 (“[T]he Commission has the authority (spelled out in Executive Order 13186) to draft regulations that minimize take of migratory birds.”); Comments of ABC at 51; Comments of DoW at 7, 8.

¹⁸⁹ E.O. 13186 at § 2(g), 66 Fed. Reg. at 3853.

¹⁹⁰ 5 U.S.C. § 104.

¹⁹¹ The FCC is not an “executive department,” as defined in 5 U.S.C. § 101. Nor is it an “executive agency,” as defined in 5 U.S.C. § 105. It is “a creature of the legislative branch and the executive branch,” see *Deerfield v. FCC*, 992 F.2d 420, 428 (2d Cir. 1993), rather than being “an executive department or agency.” See Comments of FWS at 4 (acknowledging that “the FCC is not defined as a ‘Federal Agency’ under 5 USC 104”).

¹⁹² *NPRM*, 21 F.C.C.R. at 13246 n.32; see also *Freytag v. Commissioner*, 501 U.S. 868, 920 (1991) (J. Scalia, concurring) (“independent establishments” include “the so-called ‘independent regulatory agencies’ such as the FCC and the Federal Trade Commission”).

C. The Endangered Species Act Provides No Basis for FCC Regulation.

Contrary to the assertions of ABC and others,¹⁹³ the ESA does not provide any basis for imposing general avian protection regulations concerning communication towers, as the ESA applies only to threatened or endangered species or critical habitats. The FCC has already fulfilled its obligation under the ESA to consult with FWS to ensure that its actions are not likely to “jeopardize the continued existence” of endangered or threatened species or to cause modification or destruction of critical habitats.¹⁹⁴ The FCC did so in 1988 by revising its rules¹⁹⁵ after a full consultation with both FWS and the Council on Environmental Quality (“CEQ”) *and* having received those agencies’ approval.¹⁹⁶ Under these rules, a party planning to construct a tower must evaluate whether the proposed facilities may affect listed endangered or threatened species,¹⁹⁷ and that party has authority to consult with FWS in the process of determining whether an environmental assessment is necessary.¹⁹⁸

¹⁹³ ABC includes separate arguments about the ESA in its comments, *see* Comments of ABC at 35-40, while FWS and DoW merely insert references to the ESA into more general arguments, *see* Comments of FWS at 3, 11; Comments of DoW at 2, 5. ABC, in particular, takes the position that the FCC must prepare a Biological Assessment in advance of virtually every tower registration or authorization, *see* Comments of ABC at 37-39, and it argues that the FCC must engage in a nationwide consultation with FWS concerning avoidance and mitigation measures, *see id.* at 40.

¹⁹⁴ 16 U.S.C. § 1536(a)(2).

¹⁹⁵ 47 C.F.R. § 1.1307(a)(3).

¹⁹⁶ *Amendment of the Commission’s Environmental Rules*, 3 F.C.C.R. 4986, 4986 & n.5, 4987 (1988).

¹⁹⁷ It is important to bear in mind that the ESA’s consultation provision only pertains to endangered or threatened species and does not extend to “birds of conservation concern.” *See* 16 U.S.C. § 1536(a)(2). FWS compiles its list of “birds of conservation concern” pursuant to a statutory mandate to identify migratory birds that are likely to become candidates for listing as endangered or threatened species in the future without further conservation action. FWS specifically states that its “list makes no finding with regard to whether they warrant

(footnote continued)

The ESA process that the FCC has implemented addresses the concerns of the ESA and it works well. There are few, if any, cited instances of endangered or threatened bird deaths in the vicinity of communications towers, and it is unclear in the few such cases whether the deaths were caused by the towers. For example, the final reports in the Michigan study reveal no kills of endangered or threatened birds at the sites studied, even though one of the sites was selected specifically because it was in the breeding range of the endangered Kirtland's Warbler, and other randomly selected sites were also in the vicinity.¹⁹⁹ Moreover, the comments by proponents of regulation cite *no* examples of endangered bird deaths and an extremely small number of examples of threatened bird deaths.²⁰⁰ Within this small number of examples, there is no cited evidence that those birds were killed by towers, rather than by some other man-made facility (*e.g.*, power lines, automobiles, and windows) or by a predator or natural causes; instead these commenters can only point to the fact that the birds were found in the vicinity of towers. The fact that an extremely small number of threatened species have been killed near towers suggests strongly that towers do not pose a potential to harm threatened or endangered species and the existing process is working. As the Commission has previously stated, "a few examples in no

(footnote continued)

consideration for ESA listing." FWS, *Birds of Conservation Concern 2002* at i, available at <<http://www.fws.gov/migratorybirds/reports/bcc2002.pdf>>.

¹⁹⁸ See 47 C.F.R. § 1.1307(a)(3) note; Letter from Susan H. Steiman, Associate General Counsel, FCC, to Steve Williams, Director, FWS (July 9, 2003), available at <<http://wireless.fcc.gov/siting/endangeredspeciesletter.pdf>>.

¹⁹⁹ See Gehring (4/07) Lighting Report at 4, 18-19; Gehring (4/07) Height/Guy Wire Report at 3, 16-19.

²⁰⁰ FWS states that two Red-cockaded Woodpeckers, a threatened species, have been found at one tower, and that Spectacled and Steller's Eiders, both threatened species, have been found at sites in Alaska. Comments of FWS at 10-11; *see also* Comments of ABC at 36.

way justify the complete overhaul of the Commission’s long-standing environmental rules.”²⁰¹ Accordingly, the ESA cannot be used to justify the implementation of a broad new regulatory scheme.

D. The National Environmental Policy Act Does Not Provide a Basis for Regulation.

NEPA only applies to “major federal actions” that “significantly affect[] the quality of the human environment.”²⁰² Proponents of avian-tower regulation do not and cannot show that the tower siting and construction process meets these criteria.

1. Tower Siting/Construction Is Not a Major Federal Action.

None of the proponents of regulation has provided any valid grounds for finding that the tower siting and construction process is a major federal action. ABC asserts only that this process is a “federal action,” without ever showing that it is also “major,” while DoW appears simply to assume that it is a major federal action.²⁰³ Whether tower siting and construction is a major federal action is a threshold issue. It cannot be ignored or glossed over.

As discussed in more detail in the Infrastructure Coalition’s comments,²⁰⁴ the Supreme Court’s *DOT v. Public Citizen*²⁰⁵ held that an action is a major federal action only if it is an action “with effects that may be major and which are potentially subject to Federal control and

²⁰¹ *Public Employees for Environmental Responsibility; Request for Amendment of the Commission’s Environmental Rules Regarding NEPA and NHPA*, 16 F.C.C.R. 21439, 21445 (2001).

²⁰² 42 U.S.C. § 4332(2)(C).

²⁰³ *See, e.g.*, Comments of DoW at 3-5; ABC at 15; *see also* Comments of ABC at 20-21, 24-25.

²⁰⁴ Comments of Infrastructure Coalition at 17-19.

²⁰⁵ *Department of Transportation v. Public Citizen*, 541 U.S. 752 (2004).

responsibility.”²⁰⁶ The Court found that more than mere causality is required, however: there must be “‘a reasonably close causal relationship’ between the environmental effect and the alleged cause,” such that the effect is fairly traceable to the action as its “proximate cause.”²⁰⁷

Under this analysis, the siting and construction of a tower is not a major federal action, even where FCC registration or other authorization is required.²⁰⁸ Any FCC approval is a mere link in the causal chain, far from being the proximate cause of any effects that may ultimately impact birds. The FCC does not choose the site location, nor does it select the tower’s height or design. Those are decisions made by licensees and tower owners, with the input and authorization of local zoning officials. The FCC is not the central or moving force behind tower siting and construction and any approval cannot be considered the proximate cause of any avian mortality. As a result, there is no “federal action,” because the “overall federal involvement . . . [is] not sufficient to turn essentially private action into federal action.”²⁰⁹

Moreover, in the substantial number of cases where the FCC is not involved at all in the causal chain leading to tower construction, a major federal action finding is even more tenuous. For example, geographic service area licensees require no specific FCC review or approval for

²⁰⁶ 40 C.F.R. § 1508.18, *quoted in Public Citizen*, 541 U.S. at 763.

²⁰⁷ *Public Citizen*, 541 U.S. at 767 (*quoting Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983)).

²⁰⁸ *See* discussion *supra* note 183 (citing Comments of the Infrastructure Coalition at 18-20).

²⁰⁹ *NAACP v. Medical Center, Inc.*, 584 F.2d 619, 629 (3d Cir. 1978). Even if the FCC’s approval were, *arguendo*, considered federal action, it would at most be “minimal” or “marginal” federal action due to the lack of nexus between the FCC’s approval and any effects of tower construction on birds. *See id.*; *Sierra Club v. Penfold*, 857 F.2d 1307, 1314 (9th Cir. 1988) (*citing State of Alaska v. Andrus*, 591 F.2d 537, 541 (9th Cir. 1979); *accord Department of Environmental Protection and Energy v. Long Island Power Authority*, 30 F.3d 403, 417 (3d Cir. 1994); *see also* Comments of the Infrastructure Coalition at 19-20).

the construction of towers that do not require notice to the FAA²¹⁰ — indeed, in many cases there is not even a reporting requirement²¹¹ — and the FCC has no knowledge of the locations or design of such towers either before or after their construction.²¹² In such cases, the FCC has no causal connection whatsoever to a given tower’s effects, and thus there is no “federal action” at all as a precondition to the tower’s construction.²¹³

2. Avian Mortality Levels Have Not Been Shown to Significantly Affect the Quality of the Human Environment.

The record does not support a determination that avian mortality resulting from communication towers “significantly affect[s] the quality of the *human environment*.”²¹⁴ NEPA, therefore, does not empower the FCC to adopt tower regulations concerning migratory birds.

Under the CEQ regulations implementing NEPA, the significance of an effect on the environment is based on an evaluation of both the *intensity* (severity) and the *context* of the effect.²¹⁵ The proponents of regulation cite these regulations, but they fail to meaningfully

²¹⁰ See, e.g., 47 C.F.R. § 24.11(b) (“Applications for individual sites not required and will not be accepted.”); § 27.11(a) (same); see also 47 U.S.C. §319(d) (stating that construction permits are not necessary “for stations licensed to common carriers, unless the Commission determines that the public interest, convenience, and necessity would be served by requiring such permits . . .”).

²¹¹ See, e.g., 47 C.F.R. § 24.815(j) (requiring only the internal maintenance of a list of site locations).

²¹² See Comments of the Infrastructure Coalition at 19-20.

²¹³ See *id.* at 19 n.63 (distinguishing *CTIA-The Wireless Association v. FCC*, 466 F.3d 105 (D.C. Cir. 2006), a National Historic Preservation Act case).

²¹⁴ 42 U.S.C. § 4332(C) (emphasis added); see *Sierra Club v. United States Army Corps of Engineers*, 771 F.2d 409, 411 n.2 (8th Cir. 1985); 40 C.F.R. § 1505.1. The “human environment” includes the natural and physical environment and the relationship of people with that environment. 40 C.F.R. § 1508.14.

²¹⁵ 40 C.F.R. § 1508.27.

analyze the data in accordance with these criteria when they attempt to demonstrate that incidental avian mortality resulting from tower siting and construction should be deemed significant under NEPA. As the following sections demonstrate, neither the intensity nor the context of the current effect of towers on birds warrants a finding that there is a significant impact on the human environment.

(1) The Intensity of Tower-Related Avian Mortality Is Not Significant.

The CEQ regulations define “intensity” as “the severity of impact,” accounting for a wide variety of factors and taking into account “both beneficial and adverse” impacts.²¹⁶ These factors include: effects on public health and safety; impacts on sensitive geographic areas or protected or endangered species; the degree to which the action may be precedential, controversial or uncertain; and cumulative or illegal effects.²¹⁷

The proponents of avian-tower regulation acknowledge these individual intensity factors, but generally do not address them with any rigor.²¹⁸ As a threshold matter, there has been no suggestion that avian-tower mortality is relevant to public health and safety, and it plainly has no impact on historic or cultural resources. Moreover, any impacts on sensitive geographic areas or endangered or threatened birds or their habitats are already mitigated by FCC rules requiring the preparation of an EA prior to construction of a tower which may affect them.²¹⁹ While evidence in the record may be controverted, the uncertain state of the science bodes against a finding of

²¹⁶ 40 C.F.R. § 1508.27(b).

²¹⁷ 40 C.F.R. § 1508.27(b); *see Friends of Ompompanoosuc v. FERC*, 968 F.2d 1549, 1556 (2d Cir. 1992) (“Significantly, the regulations do not prescribe the weight to be given to these criteria.”).

²¹⁸ *See* Comments of ABC at 26; DoW at 5.

²¹⁹ *See* 47 C.F.R. § 1.1307(a)(1)-(7); *see also* discussion *supra* Section III.C.

significance, as the Infrastructure Coalition discussed in its comments.²²⁰ While ABC discusses cumulative impacts,²²¹ as Woodlot explains, the literature does not support a finding of biological significance with respect to effects on migratory birds as a whole or by species.²²² Finally, notwithstanding DoW's protestations to the contrary,²²³ the FCC is not violating federal environmental laws by declining to implement any additional regulations here, as discussed in this section.

Instead of analyzing the individual intensity factors, proponents of avian-tower regulation simply argue the "significance" of the effects of towers on birds in general.²²⁴ In its comments, the Infrastructure Coalition noted that the Avatar Report stated there is no evidence of "mortality that is of sufficient magnitude and importance that it causes the viability of a particular population or species to be affected."²²⁵ Using "biological significance" as a measure of significance, the comments referenced consistent findings by both Woodlot and Avatar that existing information does not indicate that towers are having a biologically significant effect on migratory birds.²²⁶ As Woodlot has explained, "The biological significance of avian mortality should be related to likelihood of [e]ffects to populations not effects to individual birds. Currently, available data are not sufficient to allow an accurate assessment of the numbers of

²²⁰ See Comments of the Infrastructure Coalition at 22-23 & n.76.

²²¹ See Comments of ABC at 26.

²²² See Woodlot (5/07) Technical Report at 1, 11.

²²³ See Comments of DoW at 5.

²²⁴ See Comments of ABC at 20-24; Comments of FWS at 7-11, 12-14; DoW at 5.

²²⁵ Avatar Report at § 3.5.4, *quoted in* Comments of Infrastructure Coalition at 21.

²²⁶ See Woodlot, Technical Comment, at 3 (Feb. 2005) ("Woodlot (2/05) Technical Report"); Avatar Report at § 5.1.

individual birds killed at towers on a species-by-species basis, and are not sufficient to extrapolate to population-level effects.”²²⁷

LPP now contends that “[a]n estimate of the number of each avian species killed at towers can be obtained by multiplying the total estimate of mortality by the average proportion of each species found in kills at towers.”²²⁸ In turn, LPP claims the resulting estimates demonstrate that avian collisions with towers are having a biologically significant effect.²²⁹ These latest estimates, however, do not withstand scientific rigor and do not alter the prior findings of both Woodlot and Avatar.²³⁰

As Woodlot explains and as detailed above,²³¹ the LPP comments are not transparent, have not completed peer review, and do not provide the detail necessary to corroborate their analyses.²³² Moreover, the fundamental underpinning of the analyses, which is the regression equation, cannot be independently reproduced and verified.²³³ Because LPP’s estimates of biological significance are based on this regression analysis, they are “speculative,” “misleading” and “uncertain” for the reasons stated above.²³⁴ Even, LPP acknowledges that its estimates

²²⁷ Woodlot (6/05) Technical Report at 1; *see also* Comments of Infrastructure Coalition at 22; Avatar Report at § 5.1 (“There are no studies to date that demonstrate an unambiguous relationship between avian collisions with communications towers and population decline of migratory bird species.”).

²²⁸ LPP Report at 8.

²²⁹ *See id.* at 14-17.

²³⁰ *See* Woodlot (5/07) Technical Report at 1, 8-11; *see also* Woodlot (2/05) Technical Report at 3; Avatar Report at § 5.1.

²³¹ *See* discussion *supra* Section I.B.

²³² *See* Woodlot (5/07) Technical Report at 8-11.

²³³ *See id.*

²³⁴ *See id.* at 10-11.

contain “uncertainty” and “must be interpreted with caution.”²³⁵ Accordingly, as Woodlot concludes, “there is still insufficient evidence . . . to support a finding of biological significance.”²³⁶

(2) Tower-Related Avian Mortality, Viewed in Context, Is Not Significant.

“Context,” is defined by the CEQ as follows:

This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.²³⁷

DoW correctly summarizes this definition of context, but fails to show how isolated avian deaths that may be caused by towers when viewed in any of these “contexts” is significant.²³⁸ ABC and FWS both fail to address the contextual component of any tower-related avian mortality. ABC’s consultant, LPP, acknowledges that the FCC should consider factors such as other sources of human-caused avian mortality, but claims they should only be taken into account in determining cumulative mortality for individual species, and that “undifferentiated proportions of all birds killed by different sources are not relevant to impact analysis.”²³⁹ No support is provided for this proposition.

²³⁵ LPP Report at 6, 13.

²³⁶ Woodlot (5/07) Technical Report at 1.

²³⁷ 40 C.F.R. § 1508.27(a).

²³⁸ Comments of DoW at 5.

²³⁹ LPP Report at 17-19.

In its comments, the Infrastructure Coalition noted that a discussion of context requires consideration of other causes of avian mortality, such as buildings, transmission lines, and vehicles. The significance of avian mortality attributable to towers must be evaluated in the context of *all* these other possible causes of death and in the face of declining avian-tower mortality reported over the last two decades.²⁴⁰ Consideration of these factors leads to the conclusion that tower collisions are one of the smallest human-caused sources of avian mortality — only about 0.42% of avian deaths due to humans are caused by towers, far lower than the mortality rates attributable to hunting, collisions with windows or vehicles, wind turbines, power lines, pesticides, and oil pollution.²⁴¹

Indeed, even assuming *arguendo* the validity of LPP’s new estimate that 4.3 million birds are killed per year due to towers,²⁴² — figures which are at a minimum unproven — this number is dwarfed by FWS high-end estimates that building window strikes kill up to 980 million birds per year, vehicular strikes kill up to 80 million birds per year and power line collisions kill as many as 175 million birds per year.²⁴³ Thus, *using only FWS’s own estimates*, towers are a minor human cause of bird kills when viewed in context.²⁴⁴

²⁴⁰ See, e.g., Gauthreaux article, *supra* note 116 at 77 (“Only a few studies have continued into the 1990s . . . and these studies indicate a significant decline in the number of tower fatalities over the last 20 years . . .”).

²⁴¹ Comments of Infrastructure Coalition at 8, 23 (citing Woodlot (6/05) Technical Report at 6 & Figure 1).

²⁴² LPP Report at 5.

²⁴³ Comments of FWS at 13.

²⁴⁴ See, e.g., Comments of Sprint Nextel at 3-4.

3. NEPA Does Not Permit Retroactive Tower Changes.

Even if the Commission were to find (incorrectly) that NEPA provides it with authority to change its rules prospectively, NEPA itself does not allow an agency to retroactively revisit a completed project. The proponents of avian-tower regulation and policies not only want such changes to occur prospectively, but seek to “transition” all existing towers to the new rules — particularly with respect to lighting.²⁴⁵ Assuming *arguendo* tower siting and construction is a major federal action, once the FCC has issued the tower registration or otherwise approved the tower, or the licensee has acted to construct the tower if FCC registration/approval is not required, then any arguable major federal action is complete.²⁴⁶ If a project has been completed in good faith, NEPA does not provide a vehicle to revisit the completed project.²⁴⁷

E. The Record Does Not Meet the Standards Established by the Data Quality Act as a Basis for Rulemaking.

As the Infrastructure Coalition comments pointed out, the Data Quality Act and the related OMB implementation rules and guidelines set rigorous standards for information and data relied upon in reaching agency decisions.²⁴⁸ The evidence relied upon must be both (i) objective and (ii) developed through sound research techniques.²⁴⁹ In particular, OMB’s *Peer Review*

²⁴⁵ See, e.g., Comments of ABC at 96-97.

²⁴⁶ *Norton v. South Utah Wilderness Alliance*, 542 U.S. 55, 73 (2004) (there is no remaining major federal action once the federal government’s role has come to a close).

²⁴⁷ See *Ogunquit Village Corp. v. Davis*, 553 F.2d 243, 245-47 (1st Cir. 1977) (finding no remedy under NEPA following completion of a project, absent a “conscious design to circumvent the requirements of NEPA as would amount to bad faith”), cited in *National Wildlife Fed. v. Appalachian Reg. Commission*, 677 F.2d 883, 889-90 (D.C. Cir. 1981); *Aertsen v. Landrieu*, 637 F.2d 12, 19 (1st Cir. 1980).

²⁴⁸ Comments of Infrastructure Coalition at 37-42.

²⁴⁹ *Id.* at 38.

Guidelines require that all scientific data and studies that will have a “substantial impact on important public policies or private sector decisions” must be peer reviewed unless such review is unlawful.²⁵⁰ Indeed, FCC Commissioners have recently noted the importance of peer-reviewed science when used as the basis for agency action, both in the media ownership proceeding and in testimony before Congress.²⁵¹

None of the proponents of regulation have addressed the applicability and requirements of the DQA. Moreover, other than Evans/Manville, there is scant new evidence that has been submitted or has been cited as a basis for regulation that has been peer reviewed. In fact, a large number of the studies, papers, and sources of data on which the proponents rely in their comments are undisclosed, unpublished, not yet completed, anonymous, or anecdotal — often in combination.²⁵² Some of the information relied on is ascribed only to posts on email lists,²⁵³ and other information is attributed to an unpublished undergraduate paper.²⁵⁴

Few, if any, of the studies and data reports relied on by the proponents of avian-tower regulation have been peer-reviewed at all, much less in accordance with the OMB *Peer Review Guidelines*. Several of the papers authored by Dr. Longcore and relied upon by him in his LPP

²⁵⁰ OMB, *Final Information Quality Bulletin for Peer Review*, 70 Fed. Reg. 2664, 2667, 2675 § II.1 (2005) (“*Peer Review Guidelines*”).

²⁵¹ See Comments of Infrastructure Coalition at 9-10.

²⁵² See, e.g., LPP Report at 2 n.6 (“Banks *provides no reference.*”), 6 n.31 (“Longcore, T., C. Rich, S.A. Gauthreaux, Jr., B. MacDonald, L.M. Sullivan. *In preparation.* . . .”); Comments of FWS at 11 (“E. Lance, Anchorage Fish and Wildlife Field Office, FWS 2007 *pers. comm. and unpublished data*”), 15 (“J. Johnson . . . *unpublished data*”) (all emphases added).

²⁵³ See, e.g., Comments of FWS at 8 (“Evans reported the above-reference information on the Cornell University (CAYUGABIRDS-L@cornell.edu) and New York State list serves (nysbirds-l@cornell.edu).”).

²⁵⁴ See Comments of FWS at 15 (citing “J. Johnson . . . Swarthmore College *undergraduate research project*”) (emphasis added).

Report are cited as “in review” — presumably this means that they are undergoing some form of peer review process, but it is unclear by whom that review is being conducted, when the peer review process is scheduled for completion, or whether those papers are compliant with OMB’s requirements.²⁵⁵

The DQA and the OMB rules and guidelines require the FCC to maximize the “quality, objectivity, utility, and integrity of information (including statistical information)” on which it relies to impose a new regulatory requirement.²⁵⁶ Peer review is required for scientific studies and data that will be used as a basis for imposing such requirements. As Woodlot has previously explained and again shows, the evidence submitted into the record by proponents of avian-tower regulation, with few exceptions (*e.g.*, Evans/Manville), does not meet these core requirements and cannot be relied upon.²⁵⁷

CONCLUSION

For the foregoing reasons, and for those stated in the Infrastructure Coalition’s opening comments, the Commission should decline to adopt new regulations. It would be arbitrary and capricious to promulgate rules or policies based on a dearth of peer-reviewed studies and the existence of studies which have reached contradictory conclusions concerning key points. Instead, the Commission should encourage continuing broad-based, peer-reviewed research into

²⁵⁵ See *Peer Review Guidelines*, 70 Fed. Reg. at 2668 (“When an information product is a critical component of rule-making, it is important to obtain peer review before the agency announces its regulatory options so that any technical corrections can be made before the agency becomes invested in a specific approach or the positions of interest groups have hardened. If review occurs too late, it is unlikely to contribute to the course of a rulemaking.”).

²⁵⁶ *DQA*, *supra* note 169; OMB, *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies*, 67 Fed. Reg. 8452, 8454, 8460 § V(5) (2002) (“*Information Quality Guidelines*”); *Peer Review Guidelines*, 70 Fed. Reg. at 2667.

²⁵⁷ See Woodlot (5/07) Technical Report at 2, 3, 8, 11, 12.

avian-tower issues; foster ongoing negotiations between infrastructure groups and avian environmental groups; and support the joint efforts of those groups in their request to the FAA to conduct a conspicuity study to examine whether red sidelights can be safety eliminated.

Respectfully submitted,

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